Evidentials as epistemic modals: Evidence from St’àt’imcets

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Evidentials as epistemic modals: Evidence from St’át’imcets*

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Abstract

This paper argues that evidential clitics in St’át’imcets (a.k.a. Lillooet; Northern Interior Salish) must be analyzed as epistemic modals. We apply a range of tests which distinguish the modal analysis from the main alternative contender (an illocutionary operator analysis, as in Faller 2002), and show that the St’át’imcets evidentials obey the predictions of a modal analysis. Our results support the growing body of evidence that the functions of encoding information source and epistemic modality are not necessarily distinct. The St’át’imcets data further provide a novel argument against the claim that evidentiality and epistemic modality are separate categories. Many authors argue that evidentials differ from modals in that the former do not encode speaker certainty (see, e.g., de Haan 1999, Aikhenvald 2004). We argue that modals are also not required to encode speaker certainty; we provide evidence from St’át’imcets that marking quantificational strength is not an intrinsic property of modal elements.

Keywords: evidentiality, epistemic modality, Salish

1. Introduction
In this paper we argue that evidential markers in St’át’imcets (a.k.a. Lillooet; Northern Interior Salish) introduce quantification over possible worlds, and are restricted to epistemic conversational backgrounds. Thus, the St’át’imcets evidentials fall squarely into the category of epistemic modals. On the other hand, we also show that the St’át’imcets evidentials differ from English modal auxiliaries in two respects: the St’át’imcets evidentials explicitly encode the source of the evidence for the modal claim, and they do not encode differences in quantificational force. We further argue that these two differences are non-coincidental: an epistemic modal must choose either to distinguish source (information source) or force (quantificational strength).

Our proposals have consequences for a debate within current literature about the status of evidential markers, as well as for the theory of modals in general. Like Kratzer (1991), Izvorski (1997), Garrett (2001), Ehrich (2001), Rooryck (2001), McCready and Asher (2006), McCready and Ogata (2007) and Faller (to appear), we argue that at least some evidentials in some languages are epistemic modals. Thus, it cannot be right that evidentiality is fundamentally distinct from epistemic modality, as has been argued by e.g., de Haan (1999), Lazard (2001) or Aikhenvald (2004). De Haan claims that evidentiality encodes the source of the information contained in the utterance, while epistemic modality encodes the degree of commitment on the part of the speaker to the truth of the information. He therefore proposes that an element which distinguishes only information-source is not a modal. In this paper we show that the St’át’imcets evidentials distinguish the source of the information, and do not encode distinctions of certainty / judgment / evaluation. They thus fall squarely into de Haan’s evidential category. However, we also show that these elements must be analyzed as epistemic modals in the sense of being elements which quantify over epistemically accessible worlds. We thus reject the idea that it is an intrinsic requirement of a modal that it distinguish certainty or quantificational force. We therefore also reject Aikhenvald’s (2004:7) claim that evidentiality and modality are “fully distinct categories’, with the latter category
necessarily relating to the degree of certainty. As support for our claim that modals need not
distinguish certainty level, we observe that not just the evidentials, but all modals in St’át’imcets
(including deontics, circumstantials and futures) fail to encode distinctions of quantificational force
(see Rullmann, Matthewson and Davis to appear, Davis, Matthewson and Rullmann to appear for
detailed argumentation).

The St’át’imcets evidentials which are analyzed in this paper are listed in (1); an example of the use of each is given in (2-4). Syntactically, the evidentials are all second-position clitics.²

<table>
<thead>
<tr>
<th>(1) evidence</th>
<th>gloss</th>
</tr>
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<tbody>
<tr>
<td>ku7</td>
<td>reportative</td>
</tr>
<tr>
<td>k’a</td>
<td>inferential</td>
</tr>
<tr>
<td>-an³</td>
<td>perceived evidence</td>
</tr>
</tbody>
</table>

(2) wa7  ku7  ku  sts’ets’qwaz’  l-ta  stswáw’cw-a
be REPORT DET trout in-DET creek-EXIS
“[reportedly] There are trout in the creek.”

(3) plan  k’a  tu7  wa7  tsu7c  na  máq7-a
already INFER then IMPF melt(INCH) DET snow-EXIS
“The snow must have melted already.” (Davis 2006, chapter 23)

(4) pel’p-s-ácw-an’       nelh  neklíh-sw-a
lost-CAUS-2SG.CONJ-PERC.EVID DET.PL key-2SG.POSS-EXIS
“It looks like you’ve lost your keys.” (Davis 2006, chapter 23)
The structure of the paper is as follows. In section 2 we show that *ku7, k’a*, and *-an’* encode distinctions of information source: they are reportative, inferential, and perceived-evidence evidentials, respectively. In section 3 we outline the major analyses of evidentials in the formal semantic literature: an epistemic modal analysis (following Izvorski 1997), an illocutionary operator analysis (Faller 2002, C. Davis, Potts and Speas 2007), and a spatio-temporal deictic analysis (Faller 2003, Chung 2005, 2007). In section 4 we outline and test a set of predictions made by these approaches. We show that the St’át’ímcets evidentials obey the predictions of the modal analysis in all respects. We conclude that *ku7, k’a* and *-an’* are epistemic modals. In section 5 we show that the St’át’ímcets evidentials differ from English modal auxiliaries in that the former do not encode distinctions of certainty / quantificational force. Section 6 provides a formal analysis which accounts for the generalizations presented in the paper. Section 7 concludes; we suggest there that many of the arguments in the literature for a separation between evidentials and epistemic modals rest on a mistaken assumption that epistemic modals must encode distinctions of quantificational force (= speaker certainty).

2. **The St’át’ímcets modals encode distinctions of information source**

Each of the clitics in (1) above indicates something about the source of the information presented in the proposition. All the clitics therefore fall within the standard set of evidential meanings which are found cross-linguistically, and also within the definition of evidentiality assumed by e.g. de Haan (1999), Anderson (1986), Bybee (1985:184), Aikhenvald (2004:3), among many others. Willett’s (1988) categorization of evidentials (based on a study of 38 languages) is given in (5). Those categories which correspond to St’át’ímcets clitics have been highlighted.
Types of Evidence (Willett 1988:57)

<table>
<thead>
<tr>
<th>Direct</th>
<th>Indirect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attested</td>
<td>Reported</td>
</tr>
<tr>
<td></td>
<td>Inferring</td>
</tr>
<tr>
<td>Visual</td>
<td>Second-hand</td>
</tr>
<tr>
<td>Auditory</td>
<td>Third-hand</td>
</tr>
<tr>
<td>Other sensory</td>
<td>Folklore</td>
</tr>
</tbody>
</table>

We will first show that according to Willett’s categorization, *ku7* is an indirect reported evidential.

A sentence of the form *[ku7 p]* is felicitous whenever the speaker came to believe the content of *p* by means of a report from some other person. *ku7* may be used regardless of whether the report is second-hand, third-hand, or folklore: this is illustrated in (6-9). Note that Willett’s category ‘third-hand’ is not restricted literally to third-hand reports. Rather, any case where the speaker has heard about the situation from someone who did not themselves directly witness the situation is classified as third-hand. ‘Folklore’ cases are those where the speaker claims that the situation described is part of established oral history.\(^6\)

(6)  
*Second-hand context: Speaker is talking about a time during her childhood when a chicken attacked her. The speaker does not remember the occasion, but was told about it by her mother, who witnessed it.*

\[wá7-lhk\ an\ ]  \[ku7\]  \[nq\ ‘san’k\]
“[reportedly] I was laughing.”  
(Matthewson 2005:380)

(7) Third-hand context: Speaker is talking about the birthplace of her grandmother’s mother. She was told about this by one of her relatives, but not by anyone who witnessed the birth.

*l-ta cácl’ep-a*  *ku7*  *lh-kwis-as*  *ku*  *skicza7-s*

in-DET Fountain-EXIS REPORT  HYP-fall-3CONJ  DET  mother-3POSS

“[reportedly] Her mother was born at Fountain.”  
(Matthewson 2005:391)

(8) Third-hand context: Speaker is talking about when she heard bells ringing everywhere, and she was told that the bells were ringing because World War II had ended.

-nilh  *ku7*  *i*  *tsúkw-as*  *k-wa*  *q’eltw’ácw*  *kenkw7ú*  *Europe-a*

FOC  REPORT  when.PAST  finish-3CONJ  DET-IMPF  wage.war  DEIC  Europe-EXIS

“[reportedly] That was when they stopped fighting in Europe.”  
(Matthewson 2005:454)

(9) Folklore context: First line of a legend ‘The Dog Children’.

*wá7*  *ku7*  *láti7*  *ti*  *pápel7-a*  *smúlhats*

be  REPORT  DEIC  DET  one(HUMAN)-EXIS  woman

“[reportedly There was this woman.”  
(van Eijk and Williams 1981:32; told by Martina LaRochelle)
The data in (6-9) confirm that \textit{ku7} falls under Willett’s definition of a general reported evidential.

Turning to \textit{k'a} and \textit{-an’}, we find that these are both indirect inferring evidentials. The distinction between the two sub-types of indirect inferring evidentials is given in (10) (from Willett 1988:96):

\begin{enumerate}
\item \textit{Inference from results}: the speaker infers the situation described from the \textit{observable evidence} (i.e. from perception of the results of the causing event or action.)
\item \textit{Inference from reasoning}: the speaker infers the situation described on the basis of intuition, logic, a dream, previous experience, or some other \textit{mental construct}.
\end{enumerate}

The data reveal that \textit{k’a} is a general indirect inferring evidential: it does not specify whether the inference is based on observable results or solely on mental reasoning. \textit{-an’}, on the other hand, is restricted to cases where the inference is based on perceived results.\footnote{Thus, \textit{-an’} is usable in a subset of cases in which \textit{k’a} is. This is illustrated in (11-12) (adapted from data in Izvorski 1997).} In (11), there is no observable evidence; the assertion is based only on reasoning, and only \textit{k’a} is good. In (12), there \textit{is} observable evidence, and both \textit{k’a} and \textit{-an’} are good.

\begin{enumerate}
\item \textit{Context: You had five pieces of ts’wan (wind-dried salmon) left when you checked yesterday. Today, you go to get some ts’wan to make soup and you notice they are all gone. You are not sure who took them, but you know that John is the person in your household who really loves ts’wan and usually eats lots whenever he gets a chance.}
\end{enumerate}

\begin{enumerate}
\item \textit{a. ts’aqw-an’-ás \textit{k’a} i ts’wán-a kw s-John}
\end{enumerate}

\begin{flushright}
\texttt{eat-DIR-3ERG INFER DET.PL wind-dried.salmon-EXISDET NOM-John}
\end{flushright}
“John must have eaten the ts’wan.”

b. ?? ts’aqw-an’-ás-an’ i ts’wán-a kw s-John
    eat-DIR-3ERG-PERC.EVID DET.PL wind-dr.salmon-EXIS DET NOM-John
    “John apparently ate the ts’wan.”

Consultant’s comment re (b): “[Good] if he has bits of ts’wan on his shirt.”

(12) Context: Same as above, except that this time, it’s not just that you think it must be John because he’s the one who likes ts’wan. This time, you see the ts’wan skins in his room.

a. ts’aqw-an’-ás k’a i ts’wán-a kw s-John
    eat-DIR-3ERG INFER DET.PL wind-dried.salmon-EXIS DET NOM-John
    “John must have eaten the ts’wan.”

b. ts’aqw-an’-ás-an’ i ts’wán-a kw s-John
    eat-DIR-3ERG-PERC.EVID DET.PL wind-dr.salmon-EXIS DET NOM-John
    “John apparently ate the ts’wan.”

Another minimal pair is given in (13-14). We see that when the deduction is based on reasoning rather than any observable evidence, only k’a is felicitous (13); the presence of perceived evidence makes both k’a and -an’ felicitous (14).

(13) Context: You are a teacher and you come into your classroom and find a caricature of you
drawn on the blackboard. You know that Sylvia likes to draw caricatures.

a.  

\[ \text{nilh } k'a \quad s\text{-Sylvia } \quad ku \quad xilh\text{-tal'i} \]

FOC INFER NOM-Sylvia DET do(CAUS)-TOP

“It must have been Sylvia who did it.”

b.  

\[ \# \quad \text{nilh-as-an’} \quad s\text{-Sylvia } \quad ku \quad xilh\text{-tal'i} \]

FOC-3CONJ-PERC.EVID NOM-Sylvia DET do(CAUS)-TOP

“Apparently it was Sylvia who did it.”

Consultant’s comment for (b): “If you could see Sylvia hiding behind the door, you might say that.”

(14)  

Context: You are a teacher and you come into your classroom and find a caricature of you drawn on the blackboard. You look around and you see that only one child is covered in chalk dust, Sylvia.

a.  

\[ \text{nilh } k'a \quad s\text{-Sylvia } \quad ku \quad xilh\text{-tal'i} \]

FOC INFER NOM-Sylvia DET do(CAUS)-TOP

“It must have been Sylvia who did it.”

b.  

\[ \text{nilh-as-an’} \quad s\text{-Sylvia } \quad ku \quad xilh\text{-tal'i} \]

FOC-3CONJ-PERC.EVID NOM-Sylvia DET do(CAUS)-TOP

“Apparently it was Sylvia who did it.”
Summarizing so far, we have established that all of the three clitics explicitly encode the source of the information presented in the utterance. Their primary semantics is thus evidential, and they are classifiable within Willett’s typology as listed in (15).\(^8\)

(15) \(ku\) indirect reported evidential (‘reportative’)

\(k’a\) indirect inferring evidential (‘inferential’)

\(-an’\) indirect inferring evidential of result (‘perceived evidence’)

3. **Formal approaches to evidentials**

Within the formal semantic literature, there are three prominent classes of approach to evidentials. The first is to analyse evidentials as epistemic modals with an extra meaning component (see e.g., Izvorski 1997, Garrett 2001, Ehrich 2001, McCready and Asher 2006, McCready and Ogata 2007, among others). We outline the epistemic modal approach in section 3.1. The second is to analyse evidentials as illocutionary operators which do not contribute to the content of the proposition expressed (see Faller 2002, C. Davis, Potts and Speas 2007); we discuss these approaches in section 3.2. The third is a ‘spatio-temporal operator’ approach to deictic elements with evidential-like meanings; see Faller (2003) and Chung (2005, 2007). We briefly address the spatio-temporal analysis in section 3.3. However, we will pay the least attention to this analysis, as it is obviously not applicable to the St’át’imcets evidential clitics we are examining.

In section 4 we will apply a range of tests which empirically distinguish the epistemic modal from the illocutionary operator type of analysis. The evidence will show that all three of the St’át’imcets evidentials are of the epistemic modal type. Our results therefore confirm the growing consensus in the literature that some natural-language evidentials are epistemic modals. However,
we do not claim that all natural-language evidentials are epistemic modals. On the contrary, we believe that evidentials vary cross-linguistically in their semantics. See for example Faller (2006) for a comparison of reportatives in German and Quechua, arguing that the former are modals and the latter are illocutionary operators; see also Chung (2005) for the claim that Korean has both speech-act and non-speech act evidentials.

3.1 A modal analysis of evidentials

We adopt a standard view of the semantics of modals, according to which they introduce quantification over possible worlds. See Kratzer (1977, 1981, 1991) for the framework assumed.

Izvorski (1997) claims that in Bulgarian, the perfect is ambiguous between a perfect interpretation and an indirect evidential.9

(16) Az sâm došal
I be-1SG.PRES come-P.PART

“I have come.” (perfect)

“I apparently came.” (perfect of evidentiality) (Izvorski 1997:222)

Izvorski argues that the perfect of evidentiality (PE) introduces a universal epistemic modal. However, she also observes that (16) under its evidential meaning does not simply mean “I must have come.” Instead, the indirect evidential has an additional meaning component beyond the necessity modal. This is illustrated in (17).

(17) Knowing how much John likes wine…
a. *toy trybvada e izpil vsičkoto vino včera*

he must is drunk all the wine yesterday

“…he must have drunk all the wine yesterday.”

b. # *toy izpil vsičkoto vino včera*

he drunk-PE all the wine yesterday

“…he apparently drank all the wine yesterday.” (Izvorski 1997:227)

Unlike the plain epistemic modal in (17a), the perfect of evidentiality in (17b) is only appropriate if there are observable results of John’s having drunk the wine (e.g., one sees empty wine bottles). Izvorski accounts for this by analyzing the PE as asserting an epistemic modal meaning, and in addition presupposing that the speaker’s evidence for the embedded proposition is indirect evidence. Note that the PE allows reportative as well as inferential interpretations. Thus, the presupposition is worded in terms of ‘indirect evidence’ generally. Izvorski’s central idea is summarized in (18).

(18) assertion: □p, in view of the speaker’s knowledge state

presupposition: the speaker has indirect evidence for p (Izvorski 1997:226)

According to Izvorski, the modal base is restricted by the indirect evidence presupposition; the modal base contains only those worlds in which the available indirect evidence for p holds. The PE contrasts with a plain epistemic modal in that with a plain modal, the modal base is merely restricted to worlds in which the available evidence (which may be of any kind) holds. Izvorski in addition utilizes a contextually-determined ordering source, which orders the worlds in the modal
base according to how closely they correspond to certain beliefs about the indirect evidence.

Izvorski’s analysis is informally illustrated in (19). Listed under ‘modal base’ and ‘ordering source’ are the propositions which narrow down or order the set of accessible worlds respectively.

(19) *Ivan izpil vsičkoto vino včera*  
Ivan drunk-PE all.the wine yesterday  
“Ivan apparently drank all the wine yesterday.” (Izvorski 1997:228)

a. *Inferential interpretation:*

   Modal base: \{There are empty wine bottles in Ivan’s office\}  
   Ordering source: \{If there are empty wine bottles in someone’s office, that person has drunk the wine\}

b. *Reportative interpretation:*

   Modal base: \{Mary said that Ivan drank the wine\}  
   Ordering source: \{Normally, Mary is reliable as a source of information\}

Just like ordinary epistemic modals, evidentials quantify over worlds which are compatible with some actual-world evidence. In the inferential case, this means that we quantify over worlds in which (for example) there are empty wine bottles in Ivan’s office. The sentence asserts that in all worlds of this type in which also the proposition “If there are empty wine bottles in someone’s office, that person has drunk the wine” is true, Ivan drank the wine. Since the actual world is presupposed to be a world in which there are empty wine bottles in Ivan’s office, the sentence makes a strong claim about the actual world: unless the actual world is excluded by the ordering
source, Ivan drank the wine in the actual world.\textsuperscript{10}

Now let us turn to the reportative case. As with the inferential, the accessible worlds must be those in which some actual-world evidence holds. In a reportative case, the speaker’s evidence for the assertion is the fact that a report was made which constitutes evidence for \( p \). Therefore, the accessible worlds in the reportative case are all those worlds in which (for example) Mary said that Ivan drank the wine. The sentence asserts that in all worlds of this type in which Mary is reliable, Ivan drank the wine. Since the actual world is presupposed to be a world in which Mary said that Ivan drank the wine, the sentence makes a strong claim about the actual world: unless Mary is not reliable, Ivan drank the wine in the actual world.

A consequence of this analysis of reportatives is that a reportative sentence containing an embedded proposition \( p \) does not mean the same thing as “Somebody / Mary said that \( p \).” Under the modal analysis of reportatives, the sentence \textit{presupposes} the existence of a report which constitutes evidence for \( p \), and \textit{asserts} that \( p \) must be true, given that report. In a sentence containing a verb of saying, the sentence \textit{asserts} that a report was made, and does not commit the speaker to any claim about the truth or otherwise of \( p \). We will see data below that confirm this difference between reportatives and verbs of saying in St’át’imcets.\textsuperscript{11}

\subsection*{3.2 An illocutionary operator analysis of evidentials}

A contrasting analysis of evidentials is provided by Faller (2002) on the basis of data from Cuzco Quechua. Faller argues that the Quechua direct and reportative evidentials are not epistemic modals; they are not analyzable in terms of necessity or possibility, and they do not contribute to the proposition expressed. She analyses the direct and the reportative markers as illocutionary operators, which modify the sincerity conditions of the speech act. They may also change the illocutionary force of the sentence from plain ‘assertion’ to something else.
The idea is illustrated in (20) for the Quechua direct evidential -mi. The propositional content is p; the illocutionary force is assertion, and the sincerity condition states that the speaker believes that p and that that belief is justified by the speaker’s having seen the event e described by p (Faller 2002:25;164). The sincerity condition results in an increase in illocutionary strength over an ordinary assertion.

(20)  

Para-sha-n-mi

rain-PROG-3-mi

p = ‘It is raining.’

ILL = ASSERTs (p)

SINC = \{Bel (s,p), EV = See (s, e_p)\}

STRENGTH = +1       (Faller 2002:164)

Faller’s analysis of the Quechua reportative –si is illustrated in (21). The illocutionary force is that of ‘presentation’, and the sincerity condition says that there is some other speaker, neither the current speaker nor hearer, who asserted p.

(21)  

Para-sha-n-si

rain PROG-3-si

p = ‘It is raining.’

ILL = PRESENT (p)

SINC = \{\exists s_2 [Assert (s_2, p) \land s_2 \notin \{h,s\}]\}   (Faller 2002:199)

There is another evidential in Quechua, the conjectural, which Faller analyses as involving
epistemic modal semantics (as well as being an illocutionary operator, i.e. as well as introducing a sincerity condition).

C. Davis, Potts and Speas (2007) propose an alternative illocutionary operator analysis of evidentials, according to which an evidential changes the contextually determined standard for felicitous assertion of an utterance. Following Grice’s (1975) quality maxim, C. Davis, Potts and Speas assume that a speaker is constrained to contributing only information about whose truth s/he is relatively certain; they model this as a requirement that the proposition fall above a certain ‘quality threshold’. The quality threshold is contextually manipulable, and an evidential functions to change (usually lower) the quality threshold of an utterance. That is, a speaker who utters ‘Ev p’ asserts p, but does so in a context in which the standards for quality have been (usually) weakened.

Under this analysis, evidentials have a very similar effect to modals – hence their often-perceived similarities – but achieve the effect in different ways. An utterance of the form ‘modal p” does not assert p itself; the entire proposition ‘modal p’ falls above the ordinary quality threshold. (This in fact implies that utterance of ‘p’ is infelicitous, presumably because p lies below the quality threshold.) An utterance ‘ev p’, as noted above, does entail the assertion of p, but with a lowered threshold.12

3.3 A spatio-temporal analysis of evidentials

Before we begin applying tests to distinguish the modal from the illocutionary analysis, we will explain why we do not adopt the third potential analysis of the St’át’imcets evidentials. Faller (2003) and Chung (2005, 2007) have analysed elements in Quechua and Korean respectively as being spatio-temporal operators which give rise indirectly to an evidential meaning. These elements are thus neither illocutionary operators, nor epistemic modals; instead, they operate at the event
level and (roughly) locate an event with respect to the speaker’s perceptual field at the reference time.

The St’át’imcets evidentials we are focusing on in this paper are not spatio-temporal operators. First, they have no relation to tense; \textit{k’a}, -\textit{an’} and \textit{ku7} are compatible with past, present or future interpretations. This is shown in (22) for \textit{k’a}; the data are replicable for all three evidentials.

(22) a. \textit{Context: You look in the fridge for cake and discover there is none left.}

\begin{verbatim}
  ts’aqw-an’-ás k’a tu7 k Lenny ti kiks-a
  eat-DIR-3ERG INFER then DET Lenny DET cake-EXIS
\end{verbatim}

“Lenny must have eaten the cake.”

b. \textit{Context: You saw cake in the fridge five minutes ago, and now it’s gone. You know Lenny is in his room.}

\begin{verbatim}
  wa7 k’a ts’aqw-an’-as k Lenny ti kiks-a
  IMPF INFER eat-DIR-3ERG DET Lenny DET cake-EXIS
\end{verbatim}

“Lenny must be eating the cake.”

c. \textit{Context: You put cake in the fridge and you know Lenny will be hungry for something sweet when he gets home from work.}

\begin{verbatim}
  cuz’ k’a ts’aqw-an’-as k Lenny ti kiks-a
  going.to INFER eat-DIR-3ERG DET Lenny DET cake-EXIS
\end{verbatim}
“Lenny’ll likely eat the cake.”

Another important difference between the St’át’imcets evidentials being investigated here and the Quechua and Korean spatio-temporal markers discussed by Faller and Chung is that the latter do not encode information source. For example, Faller (2003) shows that many different types of information source are compatible with Quechua sqa, and she argues that sqa encodes no relation between the speaker and the embedded proposition p. As was shown in section 2 above, this is not the case for the St’át’imcets evidentials, each of which specify the kind of information source the speaker makes use of. As noted in footnote 2, St’át’imcets does possesses a spatio-temporal adverb lákw7a with evidential semantics. We leave fuller analysis of that adverb for future work.

4. The St’át’imcets evidentials are epistemic modals

Although there are several modal analyses of evidentials in the literature (Izvorski 1997, Garrett 2001, McCready and Ogata 2007, among others), the question of the relationship between evidentials and modals is still under debate (see for example the summary in Speas 2007). In this section we argue based on eight diagnostic tests that the St’át’imcets evidentials cannot be illocutionary operators, but instead obey the predictions of a modal analysis. The tests to be applied, most of which are adopted from Faller (2002), are listed in (23).

(23)  
   i.  (In)felicity if embedded proposition is known to be false  
   ii. (In)felicity if embedded proposition is known to be true  
   iii. Indirect evidence requirement not cancelable  
   iv.  Indirect evidence requirement not blocked by negation
v. Assent/dissent
vi. Embedding
vii. Readings in interrogatives
viii. (In)ability to raise assertive strength

We will see that a few of the tests do not actually distinguish between the rival analyses; nevertheless, the St’át’imcets evidentials obey the predictions of the modal analysis in every respect.

4.1 (In)felicity if embedded proposition is known to be false

An analysis of evidentials as epistemic modals predicts that they will be infelicitous in contexts where the speaker is sure that the embedded proposition is false. This is because the speaker is asserting that the embedded proposition is possibly or necessarily true. (24) illustrates this for English epistemic modals.

(24) # It may/must be raining, but it is not (raining).  (Faller 2002:191)

As predicted by the modal analysis, the St’át’imcets evidentials are infelicitous if the speaker is sure the embedded proposition is false. This is shown in (25-26) for the inferential evidentials.

(25) # wa7 k’a kwis, t’u7 aoz t’u7 k-wa-s kwis
IMPF INFER rain but NEG just IMPF-3POSS rain

“It may/must be raining, but it’s not raining.”
(26) # wà7-as-an’

wà7-as-an’

kwis, t’u7 aoz t’u7 k-wa-s kwis

IMPF-3CONJ-PERC.EVID rain but NEG just DET-IMPF-3POSS rain

“It’s apparently raining, but it’s not raining.”

Consultant’s comment: “It’s contradictory.”

This test applies to the reportative case as follows. A modal statement REPORT p presupposes that there is reported evidence for p, and asserts that in some or all worlds in which such a report was made, p is true. We assume (following Faller 2002:105) that the modal base contains only worlds compatible with the speaker’s knowledge. If the speaker knows that p is false, then the modal base contains only non-p-worlds, so the claim that some or all accessible worlds are p-worlds is not justified.

The data for the St’át’imcets reportative evidential are given in (27-28). These examples show that whether or not the source of the report is perceived to be reliable, reportative statements are always infelicitous if the speaker knows the embedded proposition to be false. (28) is adapted from similar data (with different results) given in Faller (2002); see (30) below.

(27) Context: Your husband always tells the truth; he is very reliable, and he also tries never to say things unless he knows for sure they are true. So when he says things, you always believe him. However, this time you know he was mistaken. Someone was injured at the Country Store and you know for sure it was Maria, because you were there when it happened and you saw it. You also know that Julia wasn’t injured because you just saw Julia and she was not injured. But your husband misunderstood the story when he heard it,
and he thinks it was Julia who was injured. Your husband comes home and tells you ‘xan’ kw s-Julia láku7 Country.Store ha lhkúnsa ku sq’it’ (‘Julia was injured at the Country Store today’). Then, when you see me later that evening, you say:

# xan’ ku7 kw s-Julia láku7 Country.Store ha lhkúnsa ku sq’it
hurt REPORT DET NOM-Julia DEIC Country.Store EXIS now DET day
“[reportedly] Julia was injured at the Country Store today.”

Consultant’s comment: “Okay if you add something like tsut nk támtsa [my husband said] at the end.”

(28) Context: You had done some work for a company and they said they put your pay, $200, in your bank account. but actually, they didn’t pay you at all.

# um’-en-tsál-itás ku7 i án’was-a xetspqíqen’kst táola,
give-DIR-1SG.OBJ-3PL.ERG REPORT DET.PL two-EXIS hundred dollar
    t’u7 aoz kw s-7um’-en-tsál-itás ku stam’
    but NEG DET NOM-give-DIR-1S.OBJ-3PL.ERG DET what
“[reportedly] They gave me $200, but they didn’t give me anything.”

Corrected to:

tsút-wit kw s-7um’-en-tsál-itás ku7 i
say-3PL DET NOM-give-DIR-1SG.OBJ-3PL.ERG REPORT DET.PL
In terms of their infelicity when the embedded proposition is known to be false, the St’át’imcets evidentials contrast with the Quechua evidentials. The latter do allow the speaker to know that the embedded proposition is false. This follows because, for example, a Quechua speech-act reportative merely presents the embedded proposition, and enforces a sincerity condition that a third person made the relevant report. This situation is compatible with the speaker being convinced that the embedded proposition is not true. The Quechua data are shown in (29-30).

(29) \( \text{para-sha-n-si, ichaqa mana crei-ni-chu} \)

\( \text{rain-PROG-3-si but not believe-1-NEG} \)

\( p = \text{“It is raining, but I don’t believe it.”} \)

\( \text{EV = speaker is/was told that it is raining (Faller 2002:194)} \)

(30) \( \text{Pay-kuna-s ſñqua-man-qa qulqi-ta muntu-ntin-pi saqiy-wa-n,} \)

\( \text{(s)-he-PL-si I-ILLA-TOP money-ACC lot-INCL-LOC leave-1O-3} \)

\( \text{mana-má riki riku-sqa-yui ni un sol-ta centavo-ta-pis} \)

\( \text{not-SURP right see-PP-2 not one sol-ACC cent-ACC-ADD} \)

\( \text{saqiy-sha-wa-n-chu} \)

\( \text{leave-PROG-1O-3-NEG} \)

\( \text{“They left me a lot of money, but, as you have seen, they didn’t leave me one sol, not one cent.”} \)
EV = It is said/They said that they left me a lot of money. 

(Faller 2002:191)

The Quechua reportative patterns in terms of this test like an overt verb of saying: in both English and St’át’imcets, it is fine to say “They said it is raining, but I don’t believe it” (cf. the consultant’s comment for (27), and the correction for (28)). Recall that the modal analysis clearly differentiates a reportative from a verb of saying. A verb of saying asserts that a certain report was made, and makes no claim about the truth or falsity of that report. A modal reportative presupposes that a report was made, and asserts that the report was at least possibly true.

4.2 (In)felicity if embedded proposition is known to be true

The modal analysis predicts infelicity if the speaker knows that the embedded proposition is true. This is firstly because the evidentials presuppose that the evidence for \( p \) is only indirect; this implies that the speaker cannot know for certain that \( p \) is true. Moreover, there will be a violation of pragmatic principles (specifically, Grice’s Quantity Maxim) if a speaker who knows that \( p \) is true asserts “possibly \( p \)” (or even “necessarily \( p \)”), since the modal statement makes a weaker claim than the simple assertion of \( p \). The modal prediction contrasts with the facts for the Quechua direct evidential, which is as strong or stronger in its speaker-certainty level than a plain assertion.

The St’át’imcets evidentials behave like modals for the purposes of this test; they are not felicitous if the speaker is sure that the embedded proposition is true. This is shown in (31-36). The reportative data in (35-36) include a case where the source is reliable, and a case where the source is unreliable.

\[
(31) \#ts\,’um\,’-qs\,-\acute{a}n’-as\quad k’a\quad kw\quad s\,-\text{Lémya7}\quad kw\quad s\,-\text{Roger;}
\]

\[
\text{lick-nose-DIR-3ERG INFER} \quad \text{DET NOM-Lémya7} \quad \text{DET} \quad \text{NOM-Roger}
\]
“Lémya7 must have kissed Roger; actually I saw it.”

Consultant’s comment: “You’re guessing but you’re saying you saw it.”

(32) # nilh k’a k-Sylvia ku xílh-tal’i; wá7-lhkan t’u7 áts’x-en
FOC INFER DET-S. DET do(CAUS)-TOP IMPF-1SG.SUBJ just see-DIR

“It must have been Sylvia who did it; I saw her.”

(33) # ts’um’-qs-án’-as-an’ kw s-Lémya7 kw s-Roger;
lick-nose-DIR-3ERG-PERC.EVID DET NOM-Lémya7 DET NOM-Roger

ats’x-en-lhkán wi7 zam’
see-DIR-1SG.SUBJ EMPH after.all

“It was apparently Sylvia who did it; I saw it.”

(34) # nilh-as-an’ k-Sylvia ku wa7 xílh-tal’i; wá7-lhkan t’u7
FOC-3CONJ-PERC.EVID DET-Sylvia DET IMPF do(CAUS)-TOP IMPF-1SG.SUBJ just
áts’x-en
see-DIR

“It was apparently Sylvia who did it; I saw her.”

(35) Context: You were invited to Ted’s wedding and you went there and watched him get married. Marilyn (Ted’s sister) didn’t see you at the wedding and didn’t know you had been
invited. She told you ‘Ted got married.’ Later, you see me and you tell me:

# melyih ku7 kw s-Ted
merry REPORT DET NOM-Ted

“[reportedly] Ted got married.”

(36) Context: You were invited to Ted’s wedding and you went there and watched him get married. Henrietta (Ted’s other sister) didn’t see you at the wedding and didn’t know you had been invited. Henrietta has a reputation for being unreliable and often lying. She told you ‘Ted got married.’ Later, you see me and you tell me:

# melyih ku7 kw s-Ted
merry REPORT DET NOM-Ted

“[reportedly] Ted got married.”

4.3 Indirect evidence requirement not cancelable

According to the version of the modal analysis we adopt, the indirect evidence requirement is a presupposition. As noted by Izvorski (1997), this predicts that the indirect evidence requirement is not cancelable (since it is not a conversational implicature). In fact, the predictions of the two theories converge here. Recall that for Faller, the indirect evidence requirement is contained within a sincerity condition. Faller observes (2002:126) that “sincerity conditions are not implicatures, since they cannot be canceled.”

Not surprisingly, the data reveal that the indirect evidence requirement cannot be canceled for St’át’imcets evidentials. This was already shown in (31-34) above for inferential k’a and for
perceived-evidence -an’. Parallel sentences are given in (37-38) for reportative ku7.

(37) # ts’um ‘-qs-án’-as ku7 kw s-Lémya7 kw s-Roger;
  lick-nose-DIR-3ERG REPORT DET NOM-Lémya7 DET NOM-Roger
  ats’x-en-lhkán wi7 zam’
  see-DIR-1SG.SUBJ EMPH after.all

  “[reportedly] Lémya7 kissed Roger; actually I saw it.”

(38) # nilh ku7 k-Sylvia ku wa7 xilh-tal’i; wá7-lhkán t’u7 áts’x-en
  FOC REPORT DET-Sylvia DET IMPF do(CAUS)-TOP IMPF-1SB.SUBJ just see-DIR

  “[reportedly] it was Sylvia who did it; I saw her.”

Consultant’s comment: “ku7 means somebody told you, you didn’t see it.”

4.4 Indirect evidence requirement not blocked by negation

The modal analysis predicts that the indirect evidence requirement projects through negation, since it is a presupposition. Under an illocutionary operator analysis, the evidential may not take scope under any operator contained within the propositional content, including negation. The theories therefore converge in predicting that the requirement for indirect evidence will still obtain in negative contexts.16 This is correct for the St’át’imcets evidentials. Before showing the data, though, we need to clarify the predicted readings.

An example from Izvorski involving scope interactions between evidentials and negation is given in (39).
Ivan ne izkaral izpita

Ivan not passed-PE the-exam

= “Ivan didn’t pass the exam (it is said/I infer).”

≠ “It is not the case that {it is said/I infer} that Ivan passed the exam.” (Izvorski 1997:228)

Izvorski uses (39) as an argument that the indirect evidence requirement of the PE does not disappear under negation and therefore is a presupposition. However, the modal analysis (unlike the illocutionary operator analysis) predicts that there is also asserted content to the evidential, which may potentially scope under negation. Thus, under an analysis of the PE as a necessity modal, (39) should still have two possible readings, depending on the scope of the modal with respect to negation. This is independent of, and consistent with, the inability of the indirect evidence requirement to be negated. We might expect both the readings informally summarized in (40a,b) to be available. We do not expect the reading in (40c).

(40) a. It is not the case that in all accessible worlds, Ivan passed the exam.

[allows Ivan to pass in some accessible worlds]

[presupposes speaker has indirect evidence for the modal claim]

b. In all accessible worlds, it is not the case that Ivan passed the exam.

[Ivan fails in all accessible worlds]

[presupposes speaker has indirect evidence for the modal claim]

c. It is not the case that I have indirect evidence that in all accessible worlds, Ivan passed the exam.
Based on the translations given by Izvorski in (39), it appears that the Bulgarian PE sentence has only reading (40b). This is consistent with the modal analysis, although an extra explanation needs to be offered for why (40a) is absent. However, such restrictions on available scope relations between modals and negation are well known from English and other languages; see for example Horn (1989:259ff).

The same results as in Bulgarian hold for the St’át’ímcets evidentials, as shown in (41-43). The negation cannot be construed as negating the indirect status of the evidence, and the asserted content of the modal displays no ambiguity with respect to negation.17

(41) aoz  k’a  k-wa-s    Sylvia  ku  xílh-tal’i

NEG  INFER  DET-IMPF-3POSS  Sylvia  DET  do(CAUS)-TOP

= “It is necessarily not Sylvia who did it.”   [presupposition: indirect evidence]
≠ “It is not necessarily Sylvia who did it.”   [presupposition: indirect evidence]
≠ “It is not the case that I have indirect evidence that it was necessarily Sylvia who did it.”

(42) cw7aoz-as-an’  kw  s-nilh-ts    s-Sylvia  ku  xílh-tal’i

NEG-3CONJ -PERC.EVID  DET  NOM-FOC-3POSS  NOM-Sylvia  DET  do(CAUS)-TOP

= “It is necessarily not Sylvia who did it.”   [presupposition: indirect perceived evidence]
≠ “It is not necessarily Sylvia who did it.”   [presupposition: indirect perceived evidence]
≠ “I don’t have indirect perceived evidence that it was necessarily Sylvia who did it.”

(43) cw7aoz   ku7   sëna7    ku    qu7   láti7
NEG REPORT COUNTER DET water DEIC (Matthewson 2005:389)

= “There was necessarily no water there.” [presupposition: reported evidence]
≠ “There was not necessarily water there.” [presupposition: reported evidence]
≠ “I do not have reported evidence that there was necessarily water there.”

For the attempted third reading of (44), the consultant corrects the sentence to (45), which contains an explicit verb of saying.

(44) cw7aoz kw sqwal’-en-tsál-em kw s-wà7 láti7 ku qu7;
    NEG DET tell-DIR-1SG.OBJ-PASS DET NOM-be DEIC DET water
    pún-lhkan s7éntsa
    find(DIR)-1SG.SUBJ 1SG.EMPH

“I wasn’t told that there was water there; I found it myself.”

These data show that the requirement for indirect evidence is not blocked by negation; this is consistent with its status as a presupposition. With respect to the scope of the asserted content, we have translated (41-43) using wide-scope universal modals, and these sentences do not admit narrow-scope universal readings. However, as we will show in section 5, the St’át’imcets evidentials, just like other modals in the language, have variable quantificational force in the sense that they allow existential as well as universal interpretations (see also Rullmann, Matthewson and Davis to appear). Given that, the single interpretation of (41-43) could just as well be rendered by an existential modal taking narrow scope with respect to negation. For current purposes, the relevant point is that the behaviour of the St’át’imcets evidentials is consistent with their analysis as modals, which carry presuppositions which narrow down the information source.18
4.5 Assent/dissent

The assent/dissent test as given by Faller (2002, 2006) says that if an element can be questioned, doubted, rejected or disagreed with, it contributes to the truth conditions of the proposition expressed. Otherwise, the element does not contribute to the truth conditions (Faller to appear: 10). Faller argues that the Quechua direct and reportative evidentials fail the assent/dissent test, and therefore are above the propositional level. As for epistemic modals, there is a debate in the literature about whether these pass the assent/dissent test; see Faller (2002, 2006), Papafragou (2000, 2006), and many references therein, for discussion. Faller and Papafragou both argue – convincingly, in our opinion – that epistemic modals, on at least some of their uses, do pass the assent/dissent test. We will see some examples below.

Before applying this test, we would like to first refine it slightly, to require that the assent or dissent take the form of an explicit agreement with, or denial of, the truth of the relevant aspect of meaning. The reason for this refinement – which actually merely makes explicit something which Faller already seems to assume when applying the test – is that even presuppositions, and even the sincerity conditions of speech acts, can be challenged or rejected, as shown in (45B) and (46B) (cf. also von Fintel’s 2004 “Hey, wait a minute!” test for presupposition failure). Only the requirement that the challenge take the form of (the relevant language’s equivalent of) “That is (not) true” ensures that the test distinguishes presuppositional material from material which contributes to the truth conditions of the utterance.

(45) A: Harriet likes the sociolinguistics professor.
   B: What sociolinguistics professor? I didn’t know we had one!
   B’: ?? That’s not true. We don’t have a sociolinguistics professor.
B’’: That’s not true. She hates him.

(46) A: I promise I’ll help you with the move.
B: Yeah, right. Last time you promised you would help out but you never showed up.
B’: ?? That’s not true. Last time you promised you would help out but you never showed up.

Now, what about epistemic modals – do they pass the assent/dissent test? In (47), which contains an epistemic necessity modal, B’s utterance does not deny the embedded proposition that Jo is the thief. Rather, B denies the modal claim that Jo must be the thief. This suggests that the modal is contributing to the propositional content.

(47) A: Jo must be the thief.
B: That’s not true. There are some other plausible suspects. Jo may be entirely innocent.

(adapted from a similar example in Faller 2002:113)

In (47), B is challenging A’s version of what the available evidence is. According to Faller (2002), this is the most common way to disagree with a modal statement: one denies one or more of the premises which narrow down the set of worlds in the modal base. The other way to dissent with a modal claim is to deny the logical relation that the speaker claims to hold between the premises and the embedded proposition.20 We will see examples of the former type of dissent for St’át’imcets evidentials below.

Another example of assent/dissent applying to epistemic modals is given by von Fintel (2005) and von Fintel and Gillies (to appear). Following work by Simons (2006) on parentheticals,
von Fintel and Gillies suggest that sentences containing epistemic modals may perform two speech acts simultaneously. The first involves the standard truth-conditional semantics for epistemic modality. The second may consist of an assertion of $p$ with a lack of conviction, or advice not to overlook the possibility that $p$ holds. The claim is that hearers can respond to an epistemic modal claim by targeting either the epistemic claim or the embedded proposition. Their example is as follows (von Fintel and Gillies to appear: 13-14, adapted from an example in von Fintel 2005):

(48) Context: Pascal and Mordecai are playing Mastermind. After some rounds where Mordecai gives Pascal some hints about the solution, Pascal says:

There might be some reds.

Mordecai, knowing the solution, has a range of possible responses:

(49) a. That’s right. There might be.

b. That’s right. There are.

c. That’s wrong. There can’t be.

d. That’s wrong. There aren’t.

Responses (49a) and (49c) agree with or deny the modal claim, not the embedded proposition.

Turning to evidentials now, the modal analysis of these predicts that they should allow assent or dissent with the modal claim. As discussed above, this usually amounts to allowing assent or dissent with the premises which narrow down the modal base. The illocutionary operator analysis, on the other hand, predicts that evidentials do not contribute to the proposition expressed
and therefore will fail the assent/dissent test.

The assent/dissent facts support a modal analysis of the St’át’imcets evidentials. Data for \( k’a \) and -an’ are given in (50-53). In (50) and (51), we see that the hearer can challenge the premises used by the speaker in creating the modal base. B is crucially not denying the embedded proposition. Instead, B denies that A has the correct information about John’s whereabouts in the worlds in which his lights are on.

(50) Context: A is driving past John’s house with B and sees John’s lights are on.

A: \( \text{wa7} \ k’a \ l-ta \ tsitcw-s-a \ s-John; \ tâkem \ i \ sts’âk’w-s-a \)

\( \text{be} \ \text{in-DET} \ \text{house-3POSS-EXIS} \ \text{NOM-John} \ \text{all} \ \text{DET.PL} \ \text{light-3POSS-EXIS} \)

\( \text{wa7} \ \text{s-gwel} \)

\( \text{IMPF} \ \text{STAT-burn} \)

‘John must be home; all his lights are on.’

B: \( \text{aoz} \ kw-a-s \ \text{wenácw; papt wa7 lháp-en-as kw-a-s} \)

\( \text{NEG} \ \text{DET-IMPF-3POSS} \ \text{true} \ \text{always} \ \text{IMPF} \ \text{forget-DIR-3ERG} \ \text{DET-IMPF-3POSS} \)

\( \text{lháp-an’-as} \ i \ sts’âk’w-s-a \ lh-as \ úts’qa7 \)

\( \text{put.out-DIR-3ERG} \ \text{DET.PL} \ \text{light-3POSS-EXIS} \ \text{when-3CONJ} \ \text{go.out} \)

‘That’s not true. He always forgets to turn his lights off when he goes out.’

B’s statement \( \neq \) “John is not home.”

B’s statement = “It is not true that John must be home.”
(51)  
Context: A is driving past John’s house with B and sees John’s lights are on.

A:  
wa7-as-an’  l-ta  tståcw-s-a  s-John;  tákem

be-3CONJ-PERC.EVID  in-DET  house-3POSS-EXIS  NOM-John  all

i  sts’ák’w-s-a  wa7  s-gwel

DET.PL  light-3POSS-EXIS  IMPF  STAT-burn

“Looks like John is home; all his lights are on.”

B:  
Same answer as in (50b).

B’s statement ≠  “John is not home.”

B’s statement =  “It is not true that John must be home.”

The St’át’ímcets Mastermind examples are given in (52-53); the results are almost the same as in English. The St’át’ímcets speakers do not much like responses of the form “Yes, there might be” or “No, there can’t be” in this context (see footnotes 23 and 24). However, this is not because they are unable to challenge the modal claim, but rather because in the Mastermind example, the responder is in possession of all the facts. Therefore, it is felt to be misleading to make a modal assertion instead of a plain assertion. However, once it is explained to the consultants that in this context, the responder is trying not to reveal the answer to the problem, the relevant sentences are accepted. These data therefore support the claim that the St’át’ímcets evidentials pass the assent/dissent test, and therefore contribute to the proposition expressed.
(52)  

Context: Imagine a game where someone places some different coloured pegs behind a screen and the other person has to guess the colours and the order after getting some clues. After some rounds where I give my son some hints about the solution, he says:

\[wá7 \quad k’a \quad i \quad tseqwtsiqw-a\]

be  INFER DET.PL red-EXIS

“There might be some reds.”

Possible responses include:

a. \[wenácw; \quad wá7 \quad k’a\]

true  be  INFER

“That’s right. There might be.”

b. \[wenácw; \quad wá7\]

true  be

“That’s right. There are.”

c. \[aoz \quad kw-a-s \quad wenácw; \quad aoz \quad k’\a \quad kw \quad s-wá7\]

NEG  DET-IMPF-3POSS  true  NEG  INFER  DET  NOM-be

“That’s wrong. There can’t be.”

d. \[aoz \quad kw \quad s-wenácw; \quad aoz \quad kw \quad s-wá7\]

NEG  DET  NOM-true  NEG  DET  NOM-be
“That’s wrong. There aren’t.”

(53) *Context: same as above.*

\[ \text{wá7-as-an'} \quad \text{tseqwtsiqw-a} \]

be-3CONJ-PERC.EVID DET.PL red-EXIS

“There might be some reds.”

Possible responses include:

a. \[ \text{wenácw; wá7-as-an'} \]
   
   true be-3CONJ-PERC.EVID
   
   “That’s true. There might be.”

b. \[ \text{wenácw; wá7} \]
   
   true be
   
   “That’s true. There are.”

c. \[ \text{aoz kw s-wenácw; áoz-as-an'} \]
   
   kw s-wá7
   
   NEG DET NOM-true NEG-3CONJ-PERC.EVID DET NOM-be
   
   “That’s not true. There can’t be.”

d. \[ \text{aoz kw s-wenácw; aoz kw s-wá7} \]
   
   NEG DET NOM-true NEG DET NOM-be
“That’s not true. There aren’t.”

Assent/dissent data for the reportative are given in (54). Here, the second speaker challenges the restriction on the ordering source that says the source of the report is reliable.

(54) **Context:** Bill is a liar; he always lies and never tells the truth. You never believe what he says. Yesterday, you heard Bill telling me that Buffy St. Marie is coming to Mt. Currie to give a concert. That was the first you had heard of it; you don’t know whether it’s true or not, but you usually don’t believe what Bill says so you think he’s probably lying. Then today, you hear me telling someone else:

\[
\text{cuz’} \quad \text{ku7} \quad \text{ts7as} \quad \text{k} \quad \text{Buffy St. Marie} \quad \text{e-ts7á} \quad \text{Lil’wat-a}
\]

\[
\text{going.to} \quad \text{REPORT} \quad \text{come} \quad \text{DET} \quad \text{Buffy St. Marie} \quad \text{to-deic Mt. Currie-EXIS}
\]

“[reportedly] Buffy St. Marie is coming to Mt. Currie.”

You say to me:

\[
\text{aoz} \quad \text{kw} \quad \text{s-wenácw;} \quad \text{kakez7-úlh} \quad \text{k} \quad \text{Bill}
\]

\[
\text{NEG} \quad \text{DET} \quad \text{NOM-true} \quad \text{lie-always} \quad \text{DET} \quad \text{Josie}
\]

“That’s not true; Bill is a liar.”

To conclude this section, we can contrast the possibility of challenging the modal claim of the evidentials (as in (50-54)) with challenging the indirect evidence requirement. The latter can *not*
be challenged using “That’s not true”, because it is a presupposition rather than part of the asserted content.

(55)  Context: Your car was stolen.

A:  nilh  ku7  s-Bill  ta  naq ’w-ens-táli-ha  n-káoh-a
    FOC  REPORT  NOM-Bill  DET  steal-DIR-TOP-EXIS  1SG.POSS-car-EXIS

    “[reportedly] It was Bill who stole my car.”

B:  #  aoz  kw  s-wenácw;  plan-lhkacw  lháp-en  kw  s-7áts’x-en-acw
    NEG  DET  NOM-true  already-2S.SUBJ  forget-DIR  DET  NOM-see-DIR-2S.CONJ

    ta  káoh-sw-a  láku7  tsitscw-s-a  s-Bill
    DET  car-2SG.POSS-EXIS  DEIC  house-3POSS-EXIS  NOM-Bill

    “That’s not true. You forgot you already SAW your car at Bill’s house.”

    Consultant’s comment (looks confused): “He didn’t take it, but the car was over at his house?!”

The consultant’s response to (55) demonstrates that she understands B’s statement “That’s not true” as denying A’s claim that Bill must/might have stolen the car. Crucially, the consultant is unable to understand B as denying the indirect evidence requirement of A’s evidential. A similar example is given in (56).

(56)  Context: Your car was stolen.
A: \textit{nilh} \textit{ku7} \textit{s-Bill} \textit{ti naq’w-ens-táli-ha n-káoh-a}

FOC REPORT NOM-Bill DET steal-DIR-TOP-EXIS 1SG.POSS-car-EXIS

“[reportedly] It was Bill who stole my car.”

B: \# \textit{aoz kw s-wenácw; plan-lhkacw lháp-en kw s-7áts’x-en-acw}

NEG DET NOM-true already-2S.SUBJ forget-DIR DET NOM-see-DIR-2S.CONJ

\textit{s-Bill} \textit{i naq’wensas ti káoh-sw-a}

NOM-Bill when.PAST steal-DIR-3ERG DET car-2SG.POSS-EXIS

That’s not true. You forgot you SAW Bill steal your car.”

Consultant’s comment (looks confused): “I don’t know! Bill DID steal the car, didn’t he? So why is that other person denying it?”

The comparison between the data in (54) and that in (55-56) is worth emphasizing, because there has been some confusion in the literature about exactly how to test assent/dissent with evidentials. For example, Faller (2002:157-158) tests assent/dissent for the Quechua direct evidential -\textit{mi} by testing whether the requirement that the speaker have the best possible grounds for the statement can be challenged. Faller shows that if a speaker says (57a) using the direct evidential, the hearer may not reply with (57b’), which denies the speaker’s having best possible grounds.

(57) a. \textit{Ines-qa qaynunchay ñaña-n-ta-n watuku-rqa-n}

Ines-TOP yesterday sister-3-ACC-\textit{mi} visit-PST1-3

\textit{p} = “Ines visited her sister yesterday.”
However, the inability to deny the source of the evidence using “That’s not true” is predicted under either the modal approach or the illocutionary operator approach. Under an Izvorski-type modal approach, it is predicted because the (in)direct evidence requirement is modeled as a presupposition. The data in (57) therefore do not actually distinguish the two analyses. Similarly, although Faller shows (2002:195-196; to appear: 11) that the Quechua reportative -si does not allow cancellation of the requirement that the source of the information was a report – one cannot reply to (58a) with (58b) –, she does not show whether the modal claim itself can be canceled.

(58) a.  Ines-qa qaynunchay ñaña-n-ta-s watuku-rqa-n
      Ines-TOP yesterday sister-3-ACC-si visit-PST1-3

  p = “Ines visited her sister yesterday.”

  EV = speaker was told that p
b. Mana-n chiqaq-chu. # Mana-n chay-ta willa-rqa-sunki-chu
not-BPG true-NEG not-BPG this-ACC tell-PST1-3S2O-NEG

“That’s not true. You were not told this.”

(Faller to appear: 11)

To really show whether the Quechua reportative passes the assent/dissent test, we would need data more like that schematized in (59) (cf. the St’át’ímcets example in (54)). In this case, the hearer challenges the premises the speaker used to narrow down the modal base (i.e., the premise that the source was reliable).26

(59) A: Inés visited her sister yesterday [reportative]
B: That’s not true. You heard that from a totally unreliable source, so it could easily be false that she visited her sister yesterday.

Such data will be difficult to come by in spontaneous discourse, because usually, the hearer will not know exactly who the report was heard from. However, we saw above that when the right context is created, the St’át’ímcets reportative passes the assent/dissent test.

4.6 Embedding

Another test for whether evidentials contribute to the truth of the proposition expressed involves embedding. The idea is that an element which can be embedded within the antecedent of a conditional or under a factive attitude verb or a verb of saying must be contributing to the propositional content, and is therefore not an illocutionary operator. For example, (60) shows that illocutionary adverbials such as frankly are not embeddable, while reportedly and obviously are.
In (60a), the addressee is instructed not to be surprised if John’s book has sold very little – not if the speaker is frank when saying the sentence. The meaning of frankly is not embeddable (and the sentence is, in our judgement, degraded). In (60b), on the other hand, the matter should be investigated if the ball is reported to be over the line; the requirement is not that the ball be over the line before an investigation is warranted. Similar results obtain for (60c) with obviously.

It is important to note that this test provides a one-way implication only, for reasons discussed in detail in Faller (2002, to appear), and Papafragou (2006). An element which contributes to propositional content – such as, by hypothesis, epistemic modals – may be embeddable, or may not be embeddable, due to independent reasons. For instance, Papafragou (2006) and Faller (2002, to appear) discuss how the embeddability of epistemic modals may depend upon whether they are interpreted objectively or subjectively (Papafragou’s terms), or descriptively or m-performatively (Faller’s terms). We will show in this section that the St’át’imcets evidentials are freely embeddable under verbs of saying, but not under the St’át’imcets equivalent of if. In this respect they behave like the Tibetan evidentials discussed by Garrett (2001), and like subjectively-interpreted epistemic modals in English. As just discussed, the failure to embed under if does not require us to conclude that the St’át’imcets evidentials are not contributing to propositional content.27

We begin with reportative ku7. This has two readings when it is embedded under verbs of saying. It may either merely reinforce the matrix verb of saying (cf. Portner’s 1997 ‘mood-
indicating’ modals in English), or it may be semantically embedded (in which case it was the embedded subject who heard about the proposition from someone else). Examples of each are given in (61) and (62) respectively. Note that the issue here is not one of relative scope between the evidential and the attitude verb. The contrast here is between an essentially meaningless (or reinforcing) use of the modal (61), as opposed to a true embedded reading (62). It is the latter reading which provides evidence against an illocutionary operator analysis.

(61) a. Context: Lémya7 saw Mary at the bank and Mary was obviously pregnant. Later, Lémya7 told you that Mary was pregnant. You yourself haven’t seen Mary yet. Then you tell me:

\[
\text{tsut kw s-Lémya7 kw sqwemémn’ek ku7 s-Mary}
\]

say DET NOM-Lémya7 DET pregnant REPORT NOM-Mary

“Lémya7 said that Mary is pregnant.”

[speaker was told by Lémya7; Lémya7 witnessed it; ku7 merely reinforces the matrix verb of Lémya7’s saying]

b. \[
\text{wa7 tu7 tsun-tumúl-itas kw s-wá7 ku7}
\]

IMPF then say(DIR)-IPL.OBJ-3PL.ERG DET NOM-be REPORT

\[
\text{cw7it láti7 i ámh-a melk}
\]

many DEIC DET.PL good-EXIS milk

“They told us that there was lots of good milk there.”

[We were told by them; they witnessed it; ku7 merely reinforces matrix verb of telling] (Matthewson 2005:204)
c.  
```
  tsut kw s-ats'x-en-ás ku7 ku wa7 ‘sasquatch’
```
say DET NOM-see-DIR-3ERG REPORT DET IMPF sasquatch

“He said he saw a sasquatch.”

[Speaker was told by him; he witnessed it; ku7 merely reinforces matrix verb of
saying]  
(adapted from Matthewson 2005:416)

---

(62)  

(62) a.  
```
  tsut kw s-Lémya7 kw s-melyih ku7 ta i7mats-s-a s-Rose
```
say DET NOM-L. DET NOM-marry REPORT DET grandchild-3POSS-EXIS NOM-R.

“Lémya7 said that [she was told that] Rose’s grandchild got married.”

[Lémya7 was told; Lémya7 did not witness it; ku7 relates to the report given to
Lémya7]

Consultant’s comment: “Lémya7 was saying that and she wasn’t there either.”

b.  
```
  tsut s-Lémya7 kw sqwemémn’ek ku7 s-Mary, t’u7 plán-lhkan ii7
```
say NOM-L. DET pregnant REPORT NOM-M. but already-1SG.SUBJ DEM

zwát-en – áts’x-en-lhkan s-Mary áta7 tecwp-álhcw-a inátcwas

know-DIR see-DIR-1SG.SUBJ NOM-M. DEIC buy-place-EXIS yesterday

“Lémya7 said that [she was told that] Mary is pregnant, but I already knew that; I
had seen Mary at the store.”

[Lémya7 was told; Lémya7 did not witness it; ku7 relates to the report given to
Lémya7]
St’át’imcets *ku7* contrasts in its ability to be embedded with the Quechua reportative -*si*, which cannot scope under a verb of saying, as shown in (63). (63ii) corresponds to the ‘mood-indicating’ reading, and (63iii) to the embedded reading.28

(63) Marya ni-wa-rqa-n Pilar-(*si) chayamu-sqa-n-*ta*-s
Marya say-1O-PAST1-3 Pilar arrive-PP-3-ACC-*si*

‘Marya told me that Pilar arrived.’

i. speaker was told by someone else that Marya told the speaker that Pilar arrived

ii. speaker was told by Marya that Pilar arrived

iii ≠ Marya was told that Pilar arrived (Faller 2002:222)

The St’át’imcets inferential *k’a*, like *ku7*, also has not only reinforcing (or ‘mood-indicating’) readings, as in (64), but crucially also embedded readings, as in (65) which contains the attitude verb “believe”.

(64) Context: Your small nephew comes running up to you and tells you that his sister punched him in the face. He has a red mark on his face, and you notice that the sister is looking guilty. You tell the kids’ mother what happened and she says she doesn’t believe it, because her daughter never punches people. You say:

wenácw-nun´-lhkan kw s-tup-un´-ás k’a ta n-sqwsés7-a,
ture-DIR-1SG.SUBJ DET NOM-punch-DIR-3ERG INFER DET 1SG.POSS-nephew-EXIS

ka-kíílus-a ta smém´lhats-a
“I believe she must have hit my nephew, the girl looks guilty.”

\[
[k’a \text{ relates to speaker’s belief; speaker has inferential evidence}]
\]

\[(65) \quad \text{Context: Lémya7 was babysitting your nephew and niece and she noticed at one point that the boy had a red mark on his face and his sister was looking guilty. She tells you when you get home what she noticed. Then you tell the mother of the kids:}
\]

\[
\text{tsut s-Lémya7 kw s-tup-un’-ás } k’a s-Maria ta}
\]

\[
\text{say NOM-Lémya7 DET NOM-punch-DIR-3ERG INFER NOM-Maria DET}
\]

\[
\text{sésq’wez’-s-a}
\]

\[
\text{younger.sibling-3POSS-EXIS}
\]

“Lémya7 said that Maria must have hit her younger brother.”

\[
[k’a \text{ relates to Lémya7’s belief; Lémya7 has evidence}]
\]

Finally, the same is true of -an’, as shown in (66-67), where (67) is the semantically embedded reading.

\[(66) \quad \text{Context: Same as for (64).}
\]

\[
\text{wenácw-nun’-lhkan kw s-tup-un’-ás-an’ ti n-sqwsés7-a,}
\]

\[
\text{true-TR-1SG.SUBJ DET NOM-punch-DIR-3ERG-PERC.EVID DET 1SG.POSS-nephew-EXIS}
\]

\[
\text{ka-kiilus-a ti smém’lhats-a}
\]

\[
\text{CIRC-embarrassed-CIRC DET girl-EXIS}
\]
“I believe she must have hit my nephew, the girl looks guilty.”

[-an’ relates to speaker’s belief; speaker has inferential evidence]

(67)  Context: Same as for (65).

tsut  k-Lémya7  kw  s-tup-un’-ás-an’  s-Maria  ti
say  DET-Lémya7  DET  NOM-punch-DIR-3ERG-PERC.EVID  NOM-Maria  DET
sésq’wez’-s-a
younger.sibling-3POSS-EXIS

“Lémya7 said that Maria must have hit her younger brother.”

[-an’ relates to Lémya7’s belief; Lémya7 has evidence]

We conclude based on these data that the St’át’ímcets evidentials can be embedded in the scope of an attitude verb and therefore cannot be accounted for by an illocutionary operator analysis.

We now provide the conditionals data, noting as above, however, that the results for this sub-test are inconclusive with respect to whether the St’át’ímcets evidentials contribute to propositional content. Our findings are that none of the St’át’ímcets evidentials can take scope inside a conditional antecedent. Examples are given in (68); these are translations of examples given by McCready and Ogata (2007:167-168) (who obtain opposite results for some Japanese evidentials). The consultant’s comments for (68c) indicate that she can only understand the evidential as taking scope outside the if-clause.

(68)  a.  *lh-t’iq-as  ku7  k  Sonja, sqwal’-en-ts-kál’ap
“If [reportedly] Sonja arrives, tell me.”

b. * lh-t’iq-as k’a k Sonja, sqwal’-en-ts-kál’ap

“If Sonja has apparently arrived, please tell me.”

c. * lh-t’iq-as-an’ k Sonja, sqwal’-en-ts-kál’ap

“If it looks like Sonja has arrived, please tell me.”

Consultant’s comment: “No! … You wouldn’t say sqwal’entskál’ap, because you already think you know, you said lh’iqasan’. So nobody needs to tell you.”

In conclusion, the embedding data are consistent with – and in the case of the subordinate clauses in (62, 65, 67), force – an analysis whereby they contribute to propositional content. 29,30

4.7 Readings in interrogatives

Faller (2002:229ff; to appear) argues that only an illocutionary analysis can account for Quechua discourses such as (69), where the reportative is used to ask a question on someone else’s behalf. The situation here is that MF’s question to the mother-in-law is not heard, so the consultant repeats the question on MF’s behalf.

(69) MF to mother-in-law:
"Imayna-n ka-sha-nki"

how-BPG be-PROG-2

“How are you?”

Consultant to mother-in-law:

"Imayna-s ka-sha-nki"

how-REP be-PROG-2

“(She says) How are you?”

Faller argues that a question is a speech act of requesting the hearer to assert one proposition contained in the set of answers. In (70), q is an element of the answer-set:

(70) \[ \text{QUEST} = \text{REQUEST}(\text{ASSERT}_h(q)) \]

\[ \text{SINC} = \{\text{Des} (s, \text{ASSERT}_h(q))\} \]

(Faller 2002:237)

In the consultant’s question in (69), the reportative takes the entire question act in its scope, as in (71). This means that the speaker presents the information that a third party requested the hearer to assert a proposition from the answer set.

(71) \[ \text{EVI(REQUEST(\text{ASSERT}_h(q)))} \]

(Faller 2002:237)

We have not been able to replicate examples like (69) in St’át’imcets despite extensive elicitation. However, St’át’imcets reportative *ku7* does allow the ‘interrogative flip’ reading which appears to be cross-linguistically quite common. On this reading, the hearer is asked to base their
answer on reportative evidence. An example is given in (72), adapted from data in Faller (to appear: 14).

(72) Context: Your husband is out of town, and there was a big party last night. You wake up groggy the next morning and your friend tells you that people have been saying you were dancing with some guy at the party last night. You ask your friend:

swat ku7 k-wa tánst-s-an

who REPORT DET-IMPF dance-CAUS-1SG.ERG

“Who did they say I was dancing with?”

Interrogative flip with evidentials has received both illocutionary and modal analyses; see Faller (2002), C. Davis, Potts and Speas (2007), Garrett (2001). These readings therefore do not distinguish the two analyses (see Faller to appear for arguments to this effect). The test cases are instead those like (69). In the absence of cases like in (69) in St’át’imcets, we conclude that the interrogative data are consistent with a modal analysis of the St’át’imcets evidentials.

4.8 (In)ability to strengthen assertive strength

It is occasionally argued that evidentials and ordinary epistemic modals differ in that the former, but not the latter, can strengthen the force of an assertion rather than weaken it; see for example Faller (2002:155-156), Speas (2007:18). Faller argues that Quechua statements containing the direct evidential are understood as stronger than their plain counterparts; she further argues that their ability to strengthen the assertion is not predicted by a modal analysis, but is easy to deal with under an illocutionary operator analysis. According to her analysis (2002:25;165ff), the direct evidential
-mi enforces a sincerity condition that the speaker has the best possible grounds for making the assertion. As a side-effect of the best possible grounds sincerity condition, the assertive strength of the utterance is increased. The framework of C. Davis, Potts and Speas (2007) also predicts the existence of evidentials which strengthen the assertion, as they observe (2007:13) that raising the quality threshold is as easy as lowering it.

We have several reasons to be skeptical of the use of assertive strength as a diagnostic to distinguish an illocutionary operator from a modal analysis. First, the postulated increase in assertive strength is not easy to test in a fieldwork situation. Faller (2002:156) states that when Quechua consultants are asked about the difference between assertions containing -mi and those without, the consultants are “vague”, but often describe the former as “more emphatic” than the latter. It seems that there is no truly reliable way of independently testing the increase in assertive strength which is predicted by Faller’s best possible grounds analysis.

Our second ground for skepticism is that it is not clear that a modal analysis predicts only weakening of assertive strength. According to von Fintel and Gillies (to appear), statements involving epistemic necessity modals are not necessarily weaker than ordinary assertions.33 They note, for example, that English must is perfectly felicitous in a logical inference drawn from premises, where there is no uncertainty whatsoever.34

The final thing to note about the ‘strengthening’ diagnostic is that it is inapplicable to all indirect evidentials, since these are never claimed to increase assertive strength. The argument thus reduces to the claim that direct evidentials are not subject to a modal analysis. This may be correct, but would affect our proposals only if we wished to claim that all evidentials in all languages are epistemic modals. Since we do not claim this, all we need to show here is that the St’át’imcets evidentials which we are claiming to be modals are not direct evidentials. This was argued for in section 2.35
4.9 Summary

We have tested the Stát’imcets evidentials against eight diagnostics, most of which have been presented in the literature as ways to distinguish an illocutionary operator analysis from a modal analysis (or at least from an analysis involving contribution to propositional content). We have argued that a few of the diagnostics are inconclusive, as they do not, in fact, distinguish the analyses. However, the results are still quite striking: the Stát’imcets evidentials obey the predictions of the modal analysis in every respect. Our findings are summarized in (73).

(73)  

<table>
<thead>
<tr>
<th></th>
<th>illoc. op. analysis</th>
<th>modal analysis</th>
<th>Stát’imcets evidentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. felicitous if p is known to be false?</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>2. felicitous if p is known to be true?</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>3. indirect evidence requirement cancelable?</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>4. indirect evidence requirement blocked by negation?</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>5. pass assent/dissent test?</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>6. embeddable?</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>7. allow speech-act readings in interrogatives?</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>8. can strengthen assertion?</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
</tbody>
</table>

The Stát’imcets evidentials are clearly not illocutionary operators, and we conclude that they are epistemic modals. The latter conclusion is further supported in the next section, where we will see that the evidentials share an important property with all other modals in the language, namely that they allow variability in quantificational force.
The St’àt’ímcets evidentials do not encode distinctions of speaker certainty

According to de Haan (1999), evidentials are distinguishable from epistemic modals in that the former encode the source of information, while the latter encode the speaker’s certainty level about the proposition expressed. For example, de Haan argues that Dutch moeten (cognate with English must) is ambiguously either an epistemic modal or an evidential. He argues that under its epistemic reading, moeten “denotes a high degree of confidence in the truth of the statement on the part of the speaker.” However, on its evidential interpretation, moeten allows continuations that express either confidence or doubt. The evidential uses are illustrated in (74).

(74) a. het moeten een goede film zijn, en ik ben daar zeker van
it must a good movie be and I am there sure of
“It is said to be a good film, and I am convinced of it.” (de Haan 1997:16)

b. het moeten een goede film zijn, maar ik heb er mijn twijfels over
it must a good movie be but I have there my doubts about
“It is said to be a good movie, but I have my doubts about that.” (de Haan 1997:17)

De Haan uses the moeten data to argue that epistemic modals necessarily encode speaker certainty distinctions. We reject this idea, and will provide evidence in the rest of this section that modal elements do not always encode certainty.

Within the possible worlds semantics for modals, variation in certainty levels equates with variation in the strength of the quantification over possible worlds. Thus, a speaker who uses an existential modal is less certain about the truth of the embedded proposition than a speaker who
uses a universal modal: the speaker of (75b) is less certain about the truth of (75a) than the speaker of (75c) is.

(75)  
   a. Michl is the murderer.
   b. Michl *might* be the murderer.
   c. Michl *must* be the murderer.

In Rullmann, Matthewson and Davis (to appear) and in Davis, Matthewson and Rullmann (to appear), we argue against de Haan’s contention that modals necessarily encode distinctions of quantificational strength. We show there that a wide range of modals in St’át’imcets – including epistemics, deontics, circumstantials and futures – display variability in quantificational force. In fact, we have not discovered any modal element in St’át’imcets which encodes a particular quantificational strength. Examples are given in (76-77) for deontic *ka*, with universal and existential interpretations respectively; see the references above for many more examples, involving a range of modals in St’át’imcets.

(76)  
   cúy’-lhkacw   ka   t’u7   nas   áts’x-en   ta   kwtámts-sw-a

   going.to-2SG.SUBJ DEON just go see-DIR DET husband-2SG.POSS-DET

   “You must go to see your husband.”   (Rullmann, Matthewson and Davis to appear)

(77)  
   lán-lhkacw   ka   áts’x-en   ti   kwtámts-sw-a,   t’u7   áoz-as

   already-2SG.SUBJ DEON see-DIR DET husband-2SG.POSS-DET but NEG-3CONJ

   k-wá-su   xát’-min’   k-wá-su   nás-al’men,   t’u7   áma

   DET-IMPF-2SG.POSS want-RED DET-IMPERF-2SG.POSS go-want just good
“You may go see your husband, but if you don’t want to go, that’s okay.”

(Rullmann, Matthewson and Davis to appear)

Given the general variability of modals in St’át’imcets in terms of certainty/quantificational force, and given the evidence presented in the previous section that the St’át’imcets evidential clitics are epistemic modals, we predict that the evidentials do not lexically encode the level of the speaker’s certainty. This prediction is correct.

The examples in (78-80) are all drawn from spontaneously-produced oral narratives. (78a) presents a universal epistemic claim using k’a. The continuation in (78b) shows that the speaker perceives the anger to be a result of the loudness. This context supports a universal rather than an existential interpretation of the modal.

(78)  **Context:** Speaker is telling about when she was a child and she used to play in the evenings with her friends.

a.  
\[ na \ s-pála7-s-a, \ wá7-lhkälh \ k’a \ wenåcw-ts-am’ \]
\[ DET \ NOM-one-3POSS-EXIS \ IMPF-1PL.SUBJ \ INFER \ true-mouth-MID \]
“One time, we must have been loud.”

b.  
\[ ni…lh \ s-zaw’t-min-tumülh-as \ k’a \ láti7 \ nu \ wa7 \ wá7, \ s-Ernest Jacob \]
\[ FOC \ NOM-fed.up-RED-1PL.OBJ-3ERG \ INFER \ DEIC \ IMPF \ be \ NOM-Ernest J. \]
“And Ernest Jacob, who was living there, got fed up with us.”

(Matthewson 2005:410)
In (79), there is strong evidence in the context that Jim Hoffmann is frightened. The context thus involves a high degree of certainty on the part of the speaker and thus supports a universal epistemic modal claim.

(79) Context: Jim Hoffmann thought he saw a sasquatch and came running back with huge terrified eyes.

\[ka-qus-tum'-\text{á} \quad k'a \quad \text{wi7}\]

CIRC-frighten-PASS-CIRC \hspace{2em} \text{INFER EMPH}

‘It really must have frightened him!’ \hspace{2em} (Matthewson 2005:418)

(80) seems to involve existential force. The first sentence explicitly states that the speaker is unsure about the truth of the proposition embedded under \(k'a\) in the second sentence. Note that we cannot conclude in this context that the speaker’s mother must have put the fish away for eating later. She could have given it to relatives instead.

(80) \[cw7aoz \quad kw-en-wá \quad stexw \quad lexlåx-s \quad lh-as\]

NEG \hspace{2em} DET-1SG.POSS-IMPF \hspace{2em} very \hspace{2em} remember-CAUS \hspace{2em} HYP-3CONJ

\[kås-tum' \quad i \quad sk'wilh-a \quad ts'úqwaz'\]

what-1PL.ERG DET.PL leftover-EXIS \hspace{2em} fish

“I don’t remember what we did with the leftover fish.”

\[wa7 \quad k'a \quad qelh-n-ås \quad nilh \quad kw \quad s-ts'åqw-an'-em \quad lh-kalål-as\]

IMPF \hspace{2em} INFER \hspace{2em} put.away-DIR-3ERG \hspace{2em} FOC \hspace{2em} DET \hspace{2em} NOM-eat-DIR-1PL.ERG \hspace{2em} HYP-soon-3CONJ
“Maybe she put it away and we ate it later.” (Matthewson 2005:58)

An elicited example involving existential force is given in (81). Here, a continuation asserting that perhaps the embedded proposition is false is accepted by consultants.

(81) Context: There is some evidence that John has left, e.g. his bag has gone, but maybe he just took his bag to the bathroom.

qwatsáts  k’a  tu7  k  John,  t’u7  wa7  k’a  sxek
leave  INFER then DET John but IMPF INFER maybe

k-wa-s  cw7aoz  t’u7  k-wa-s  qwatsáts
DET-IMPF-3POSS NEG just DET-IMPF-3POSS leave

“John may (#must) have left, but maybe he hasn’t left.”

A final (volunteered) example which forces existential quantification is given in (82).

(82) Context: There is some evidence that John has left, e.g. his bag has gone, but maybe he just took his bag to the bathroom.

qwatsáts  k’a  tu7  k  John,  t’u7  sxek  cw7aoz  k’a  kw  s-qwatsáts
leave  INFER then DET John but maybe NEG INFER DET NOM-leave

“John may have left, but he may not have left.”
These data show that $k’a$, which is lexically specified for indirect inferential evidence, is not lexically restricted in terms of its quantificational force / certainty level.

Next we turn to the perceived-evidence clitic -an’. This seems to prefer universal interpretations. As shown in (83-84), -an’ is usually rejected if it is made explicit that only an existential claim is being made.

(83) # qwatsats-as-án’

```
leave-3CONJ-PERC.EVID then DET NOM-J. but IMPF INFERENCE maybe
```

```
k-wa-s cw7aoz t’u7 k-wa-s qwatsáts
```

```
DET-IMPF-3POSS NEG just DET-IMPF-3POSS leave
```

“John apparently left, but maybe he hasn’t left.”

[Attempted meaning: There is some evidence that John has left, e.g. his bag has gone, but maybe he just took his bag to the bathroom.]

(84) # qwatsats-as-án’

```
leave-3CONJ-PERC.EVID then DET NOM-J. but NEG just
```

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kw-en-s-wá zwáét-en lh-qwatsáts-as
```

```
DET-1SG.POSS-NOM-IMPF know-DIR COMP-leave-3CONJ
```

“John may have left, but I don’t know whether he did leave.”

However, -an’ is sometimes accepted and even volunteered in contexts which seem to support existential interpretations. This suggests that the universal effect with -an’ is only a preference.

(85) Context: You’re not sure it was Dave who stole your ts’wan, but maybe it was.
“It looks like it was Dave who stole my ts’wan.”

With reportative *ku7*, the difference between universal and existential force would correspond to a difference between “[Given what I’ve been told], p must be true” and “[Given what I’ve been told], p may be true”. Like -an’, *ku7* seems to prefer a high level of certainty. The reportative is always felicitous when the speaker is strongly convinced of the truth of p, because the source of the report is very reliable. This is the case in (86), where the speaker may not have ever witnessed her father driving a cab, but surely heard about it from very reliable sources.

(86) wa7 *ku7* aylh múta7 tq-álk’-en-as ta taxicab-a

“[reportedly] He [my father] also drove a taxicab around town.” (Matthewson 2005:378)

When the speaker is less certain about the truth of the embedded proposition, there is speaker variation in acceptability judgments. This is the case for example in (87), a context (88) which is designed to force an existential interpretation (“in some possible worlds in which I was told that p, p is true”).
(87)  Context: There is a rumour going around that Roger was elected chief. Sometimes that kind of rumour is right, sometimes it’s wrong. You really have no idea whether it’s likely to be right or wrong. You tell me:

% aw-an-ém  ku7  kw  s-Roger  ku  cuz’  kükwi7

choose-DIR-PASS  REPORT  DET  NOM-Roger  DET  going.to  chief

“[reportedly] Roger was elected to be chief.”

Situations similar to (87) are described by Faller (2002) as test cases for the quantificational force of a reportative modal. Faller observes (2002:109) that if the reliability of the source is unknown, only an existential analysis predicts a reportative sentence to be true. This is because if the reliability of a source is unknown, then the set of worlds in which that report is heard will include both worlds where the report is true, and worlds where it is false. Correspondingly, a universal quantification over the report worlds will be false. The fact that some speakers accept (87) therefore provides some support for the claim that ku7 allows in an existential interpretation.

So far in this section we have shown that all three evidentials under discussion show variable quantificational force, being possible both in contexts where the speaker is fairly certain about the truth of the embedded proposition, and in contexts where the speaker is less certain. We have also noted that while existential readings are relatively easy to find and elicit for ka’, they are less easy to obtain for -an’ and ku7. In the remainder of this section we propose that this latter fact does not affect our main claim that St’át’imcets evidentials fail to encode certainty distinctions.

The first thing to note is that even though -an’ and ku7 prefer universal interpretations, they clearly do not encode universal force. We know this because there are no contrasting elements in
the system: there is only one perceived-evidence evidential, and only one reportative. If existential force is appropriate in a perceived-evidence or reportative context, -\textit{an’} or \textit{ku7} will be used.

The second thing to note is that the difference between \textit{k’a} and -\textit{an’/ku7} with respect to speaker certainty tendencies actually falls out from the differences in their respective information sources. As discussed by Faller (2001, 2002), many people have argued that distinctions in information source are automatically also distinctions in certainty. Thus, for example, a visual information source leads to greater certainty than an indirect inferential information source (see e.g., Bybee 1985, and also Willett 1985 for an evidential hierarchy organized along these lines). However, Faller (2001, 2002:96-98) argues that such correlations are indirect and context-dependent, and similarly Fitneva (2001) and C. Davis, Potts and Speas (2007) claim that there is no strict or cross-linguistically consistent correlation between the source of information and the degree of speaker certainty. Assuming this is right, we expect that individual evidentials can exhibit tendencies towards greater or lesser levels of speaker certainty, based on the type of information source they encode, but that these tendencies can be overridden in context. This accords with the St’át’imcets situation, since an evidential which requires perceived evidence, such as -\textit{an’}, will naturally tend towards higher levels of certainty than one which does not, such as \textit{k’a}.

Let us summarize what we have established so far. We saw in section 2 that the St’át’imcets evidentials encode differences in information source, and in section 4 we argued that they should be analyzed as epistemic modals. We gave further support for that conclusion in this section, where we showed that the St’át’imcets evidentials pattern with other modals in the language in failing to encode quantificational force (which for epistemic modals/evidentials corresponds to speaker certainty). The obvious conclusion to be drawn from this is that (contra de Haan) it is not an intrinsic requirement of a modal that it distinguish certainty level. In section 7, we will draw an even stronger conclusion. We will claim that cross-linguistically, modals must choose between
either encoding *source* (as the St’át’ímcets evidentials do) or *force* (as English modals do).

6  **A modal analysis of St’át’ímcets evidentials**

In this section we present our formal analysis of the St’át’ímcets evidentials. The basic idea is inspired by Klinedinst’s (2005) work on possibility modals in English. Klinedinst argues that possibility modals are analogous to plural indefinite DPs. In the same way that plural indefinites existentially quantify over pluralities of entities, possibility modals existentially quantify over pluralities of possible worlds. The individual worlds that are members of the plurality of worlds introduced by the existential quantifier are then universally quantified over. The logical structure of possibility modals can be represented as in (88):

\[(88) \text{MODAL}(p) \text{ is true with respect to a modal base } B \text{ and a possible world } w \text{ iff:} \]

\[
\exists W[W \subseteq B(w) \land W \neq \emptyset \land \forall w'[w' \in W \rightarrow p(w')]]
\]

The modal is interpreted with respect to a given modal base B and a possible world w (the evaluation world). B(w) is the set of worlds that are accessible from the evaluation world w given the modal base B. (88) can therefore be paraphrased as “there is a set of worlds W that are accessible from w, such that p is true in every world in W”, or more concisely, “in some set of accessible worlds W, p is true”.

We adopt Klinedinst’s proposal as the basis for our analysis of all modals in St’át’ímcets, including evidentials. We add a twist, however. Within Klinedinst’s analysis, assuming W is non-empty, (88) is truth-conditionally equivalent to the traditional existential interpretation of possibility modals. We propose that St’át’ímcets modals are analogous to *specific* plural indefinites (“there is a *specific* set of worlds W….”). We adopt a particular formal interpretation of specific indefinites
involving choice functions (Reinhart 1997, Winter 1997, Kratzer 1998, Matthewson 1999, among others). In the same way that a choice function representing a specific indefinite determiner picks out an individual from the set denoted by the common noun (or NP), the modal choice function f will pick out a subset of the possible worlds that are accessible from the actual world. The universal quantifier then quantifies over the individual worlds that are members of the set picked out by f.

According to our analysis, St’át’imcets modals thus involve two contextually determined parameters, the modal base B and the choice function f. The modal base B functions in the same way as it does in Kratzer’s analysis of English modals: it is a function (of type $<s,st>$) which maps the evaluation world w onto the set of possible worlds that are accessible from it. The choice function f picks out a subset of B(w). The semantic type of f is therefore $<st,st>$. f is moreover restricted in such a way that, for any set of worlds W, f(W) $\subseteq$ W. Following Kratzer’s (1998) analysis of specific indefinites, we propose that f is a free variable whose value is determined by context. We also assume that the choice function is present in the LF representation of the sentence; see Rullmann, Matthewson and Davis (to appear) for discussion.

The general interpretation schema for St’át’imcets modals, interpreted with respect to an utterance context c and a world w, is given in (89). Particular modals impose lexical restrictions on the modal base; we return to this below.

(89) $[[\text{MODAL}]]^{c,w}$ is only defined if c provides a modal base B.

If defined, $[[\text{MODAL}]]^{c,w} = \lambda f_{<st,st>}. \lambda p_{<s,t>}. \forall w'[w' \in f(B(w)) \rightarrow p(w')]$}

This analysis accounts for the apparent variability in quantificational force of St’át’imcets evidentials as follows. The quantifier is uniformly universal, but variation in the choice functions affects the interpretation. The larger the subset of B(w) which f selects, the stronger the proposition
that is expressed. At one extreme, \( f \) may simply be the identity function. This results in a reading that is equivalent to the standard analysis of strong modals like English *must*. However, if \( f \) selects a proper subset of \( B(w) \), the resulting reading is weaker, although it still involves universal quantification.43

Let’s look at an example of how different choices of \( f \) explain the apparent quantificational variability of St’át’imcets evidentials. Consider (90):

(90) \( t’cum k’a kw s-\text{John} \)

\( \text{win(MID)} \quad \text{INFER} \quad \text{DET} \quad \text{NOM-\text{John}} \)

“John must/may have won.” (Rullmann, Matthewson and Davis to appear)

(90) means approximately “for a specific subset of epistemically accessible worlds \( W \), John won in all worlds that are members of \( W \)”. Now, one possible scenario is that the speaker knows that John had played bingo last night and is spending lots of money today. The modal base therefore contains all the worlds in which John played bingo last night and is spending lots of money today, and the choice function picks out a subset of these worlds. If \( f \) is the identity function, the reading is that of a standard necessity modal: “(Given his bingo-playing and money-spending), John must have won.” However, suppose that \( f \) instead picks out a proper subset of the accessible worlds, say those worlds in which John not only played bingo last night and is spending lots of money today, but also is unemployed. In that case, the sentence asserts that in all of the bingo-playing-money-spending-unemployed worlds, John must have won. But now, the sentence no longer makes a universal modal claim based on the known facts (since perhaps there are worlds compatible with the speaker’s knowledge in which John is not unemployed; these are the accessible worlds which failed to be
selected by the choice function). Instead, the utterance reduces to an existential claim: in some proper subset of the worlds compatible with the known facts, John won.

According to this proposal, there is no ambiguity or under-specification in the semantics of the modals; they are uniformly universal quantifiers over worlds. Their apparent quantificational variability simply depends on the size of the subset of B(w) that is selected by f. There is no dichotomy between a strong and a weak reading, but instead there is a continuum of different degrees of strengths. The smaller f(B(w)) is, the more restricted the universal quantifier is, and the more likely it is to be translated as English *may, could, or might* rather than *must*. However, this apparent ambiguity is only an artifact of using English as the translation medium.

The analysis of the inferential evidential is given in (91).

(91)  *Semantics of k’a (inferential)*

\[
[[k’a]]_{c,w}^{*} \text{ is only defined if } c \text{ provides a modal base } B \text{ such that for all worlds } w’, w’ \in B(w) \text{ iff the inferential evidence in } w \text{ holds in } w'.
\]

If defined, \([k’a]_{c,w} = \lambda f_{<st,st>}. \lambda p_{<st>}. \forall w'[w' \in f(B(w)) \rightarrow p(w')]\]

The analyses of *-an*’ and *ku7* are exactly parallel; the only difference resides in the definedness condition, which for *-an*’ requires that the modal base contain all those worlds in which the perceived evidence in w holds, and for *ku7* requires that it contain all worlds in which the reported evidence in w holds.

We should note that the idea that modals can lexically encode restrictions on the modal base goes back to Kratzer’s original analysis. Kratzer notes (1991:650), for example, that German *darf* is unambiguously circumstantial (with a deontic ordering source), while *wird* is unambiguously epistemic. Another similarity between the St’át’imcets evidential modals and modals in more
familiar languages is that in both systems, restrictions on the modal base can be explicitly spelled out. This is illustrated for k’a in (95).44

(95) Context: You are driving past John’s house, and wondering if he might be home. You notice his lights are on. You say:

wa7 lhap-an’-itas i ucwalmícw-a i ts’ák’w-i-ha
IMPF extinguish-DIR-3PL.ERG DET.PL person-DET DET.PL light-3PL.POSS-DET
lh-as nás-wit kenká7, t’u7 wa7 k’a t’u7 zam’ s-t’al, wa7
HYP-3CONJ go-3PL DEIC but IMPF INFER just after.all STAT-stop IMPF
s-gwel ti ts’ák’w-s-a
STAT-burn DET light-3POSS-DET

“People usually turn their lights off when they go out, so given that John’s lights are on, he must be home.”

7 Conclusion

In this paper we have provided an analysis of three Stʼátʼimcets evidentials as epistemic modals. Here we summarize our findings and briefly discuss the implications for the analysis of evidentials cross-linguistically.

We began by showing that the three elements k’a, -an’ and ku7 encode distinctions of information source: k’a requires indirect inferring evidence, -an’ requires indirect perceived evidence, and ku7 requires reported evidence. We then argued, on the basis of eight diagnostics, that the Stʼátʼimcets evidentials are not analyzable as illocutionary operators, but instead are epistemic modals with a presupposition which restricts the modal base. We further showed that the
evidentials, just like all other modals in the language, display apparent variability in quantificational force. Our formal analysis adapts proposals by Klinedinst (2005) to account for this apparent variability in quantificational force. We analyze the quantification as unambiguously universal, but utilize a choice function which narrows down the modal base, by selecting a (possibly proper) subset of the accessible worlds as the domain of the quantifier.

There is one potential counter-argument to our claim that k’a, -an’ and ku7 are modal evidentials. This would be to say that these St’át’imcets elements may indeed be epistemic modals, but they are not really evidentials. Semantically, k’a, -an’ and ku7 clearly count as evidentials: according to Aikhenvald (2004:3), “[t]o be considered as an evidential, a morpheme has to have ‘source of information’ as its core meaning.” This is certainly the case for k’a, -an’ and ku7, as was shown in section 2. However, Aikhenvald also imposes a stronger requirement on ‘grammatical evidentiality’: “[i]n languages with grammatical evidentiality, marking how one knows something is a must” (2004:6). This obligatoriness requirement is not met in St’át’imcets: we show in Matthewson and Davis (in prep.) that evidential marking in this language is optional (though strongly preferred). Does the optionality of k’a, -an’ and ku7 therefore render irrelevant all our efforts to prove they are epistemic modals?

We maintain that it does not. First, the St’át’imcets elements differ from the weaker ‘evidential strategies’ discussed by Aikhenvald (e.g., 2004:365) in that they have information source as their primary, not a secondary, meaning. Second, k’a, -an’ and ku7 are much more common than lexicalized evidential strategies in English. Their use is so pervasive, and their absence when their conditions are satisfied is so dispreferred by consultants, that Matthewson (1998) (incorrectly) claimed that their use was obligatory. Finally, we agree with McCready and Ogata (2007:152) that

Empirically, the statement that ‘true evidentials’ are obligatory is not accurate.
Although it is true that many languages that have evidentials strongly prefer their use, such use is almost never – and possibly simply *never* – obligatory.

McCready and Ogata correctly observe that although Quechua is very frequently cited as an obligatory-evidential language, Faller (2002) has clearly shown that evidentials are not in fact obligatory in this language. There is no reason not to believe that other claims about obligatory evidential use may be just as mistaken. We therefore share McCready and Ogata’s (2007) skepticism about the usefulness of the obligatory/non-obligatory opposition with respect to evidentials. Like McCready and Ogata for Japanese, we reject any notion that the non-obligatoriness of the St’át’imcets elements disqualifies them from being ‘true evidentials’.

Given, then, that the St’át’imcets *k’a, -an’* and *ku7* are evidentials and also modals, our findings have several implications for the analysis of evidentials cross-linguistically. The first is that the two categories of evidentiality and epistemic modality cannot be entirely distinct, as has been claimed by de Haan (1999) and Aikhenvald (2004). We are certainly not the first to provide a modal analysis of evidentials; see Izvorski (1997), Garrett (2001), Ehrich (2001), McCready and Asher (2006), McCready and Ogata (2007), among others. However, the St’át’imcets data contribute something novel to the debate, which we believe allows us to effectively negate many of the arguments which have been made against modal analyses of evidentials.

The critical property of St’át’imcets is that in this language, **modals do not encode the level of speaker certainty** (or in other words, they do not encode distinctions of quantificational force). It is striking that many of the arguments in the literature against modal analyses of evidentials reduce to the claim that evidentials do not encode certainty distinctions. This is true of arguments presented by de Haan (1999) and Aikhenvald (2004), as well as by Lazard (2001). For example, Aikhenvald (2004:7) cites Lazard (2001) as having providing “highly convincing arguments” that evidentiality is not a subcategory of modality. However, what Lazard actually argues is that (contrary to claims
by Plungian 2001) there is no class of ‘modalized evidentials’ which “imply a judgment about the reliability of the information” (Lazard 2001:366). What Lazard claims is therefore that evidentials do not directly encode notions such as reliability or doubt. His argument – like those of de Haan and Aikhenvald – is thus not against modality (a category whose essence, for us, is that it involves reference to or quantification over possible words), but rather against certainty distinctions.

Bearing this in mind, recall that all St’át’imcets modals – not just epistemic, but deontic, circumstantial and future modals – fail to encode certainty distinctions. This provides strong evidence for uncoupling the two notions of ‘modality’ and ‘certainty distinctions’, thereby automatically negating all Lazard-style arguments against modal analyses of evidentials.45

There is one respect in which we agree with de Haan, Aikhenvald and others, however. We believe it to be true that elements which distinguish information source usually or always fail to distinguish certainty distinctions (and vice versa). We thus predict that epistemic modals must choose to encode either ‘source or force’. Chung (2005:185-186) makes a similar suggestion; she observes that regular modals focus on the difference in probability, while evidential modals focus on the difference in the modal base and the ordering source. We thus predict that there will be no language which is like St’át’imcets, but which possesses two reportative morphemes, one which involves universal quantification and one which involves existential quantification.46

Finally, we hope that this paper has contributed to the growing evidence for the semantic heterogeneity of evidentials. As argued by Faller (2002, 2006), there is no reason to expect the core function of evidentials – the encoding of information source – to be restricted to one grammatical domain or to manifest itself in identical semantics from language to language. Empirically also, we see ample evidence that evidentials are sometimes epistemic modals, but sometimes are not. The question of whether the semantics of evidentials is predictable from independent properties (such as syntactic position, as claimed by Blain and Déchaine 2007) is an interesting question which
deserves further investigation.

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1 All data come from original fieldwork unless otherwise stated. Data are presented in the official St’át’imcets orthography, developed by Jan van Eijk (see van Eijk 1997). Abbreviations used are: CAUS = causative, CIRC = circumstantial modal, COLL = collective, CONJ = conjunctive (subjunctive) subject, COUNTER = counter to expectations, DEIC = deictic, DEM = demonstrative, DET = determiner, DIR = directive transitivizer, EMPH = emphatic, ERG = ergative, EXIS = wide-scope existential, FOC = focus, HYP = hypothetical complementizer, IMPF = imperfective, INCH = inchoative, INFER = inferential evidential, MID = middle intransitivizer, NEG = negative, NOM = nominalizer, OBJ = object, PERC.EVID = perceived evidence evidential, PL = plural, POSS = possessive, RED = redirective transitivizer, REPORT = reportative evidential, SG = singular, STAT =
stative, SUBJ = indicative subject, TOP = non-topical subject marker, TR = transitive.

2 In addition, the demonstrative adverb läkw7a, which is discussed in Matthewson and Davis (in prep.), has an evidential meaning, involving knowledge based on non-visual perception (hearing, smell, taste).

3 -an’ differs morphosyntactically from the other two evidentials in several ways. First, it obligatorily induces conjunctive subject morphology; second, it precedes rather than follows the enclitic -a which occurs with existence-asserting determiners, as well as the suffix -a which forms part of the discontinuous circumstantial modal. Finally, in its phonological shape -an’ resembles an affix rather than a clitic, since (aside from -a) vowel-initial clitics are disallowed. The last two features account for the orthographic convention whereby -an’ is written together with the preceding word, whereas k’a and ku7 are not.

4 ku7 is sometimes not expressed in the English translations given by consultants, and is sometimes rendered with ‘I was told’ or ‘somebody told me’. However, these glosses are misleading, since they express an aspect of meaning truth-conditionally which we show in section 4.4 to be only a presupposition. We have translated sentences containing ku7 uniformly with ‘[reportedly]’.

5 Aikhenvald (2004) distinguishes ‘grammatical evidentials’ from ‘evidential strategies’; in section 7 we argue that the St’át’imcets evidentials cannot be relegated to the latter category.

6 Aikhenvald (2004:59) casts doubt on Willett’s distinction between second- and third-hand information, since she has been unable to find good evidence for a distinction between these two kinds of information sources. We include data for Willett’s full range of cases here for completeness.
According to van Eijk (1997:200), "-an' "indicates that the speaker concludes something from circumstantial evidence." Davis (2006: chapter 23) observes that "-an' refers to a situation where the speaker has come to a conclusion about the truth of an event on the basis of appearances."

A reviewer asks whether speakers prefer "-an' in cases where there is perceived evidence. Since the requirements for "-an' are stronger than for "ka', Gricean reasoning might lead us to expect that using k'a would implicate that the requirements for felicitous use of "-an' are not met. We have not been able to detect a preference for "-an' in cases like (12) or (14). However, this is consistent with other parallel cases elsewhere in the language. For example, the St’át’imcets determiner system contrasts a general singular determiner with one which specifies that the referent of the DP is absent at the time of speech. Here we see no strong requirement to use the latter determiner if the referent is absent. Rather, the absent determiner is used only if the speaker wishes to emphasize the absence; the general determiner is the default. The same may be true of the evidentials: k'a may be the default indirect evidential. Potential evidence for this comes from (i), where the English translation was volunteered by the consultant, suggesting that k'a may even be licit in reportative contexts. Further research is required into whether this is generally possible.

(i) kwis  k’á  kelh  lh-nátcw-as
 rain    INFER  FUT  HYP-tomorrow-3CONJ

“They say it’s going to rain maybe tomorrow.”

Izvorski also discusses Turkish and to a lesser extent Norwegian, which appear to have very similar constructions.

It is an interesting question how one restricts the content of the report which is presupposed to have been made. On the one hand, the report does not have to have exactly the same form or truth conditions as the embedded proposition in the reportative evidential utterance. On the other hand, the content of the two cannot be too disparate, as shown in (i) for St’át’imcets. Even though John’s statement constitutes evidence for what you later express to me, your utterance cannot contain a reportative. We leave the precise characterization of the content of the report for future research.

(i) \(\text{Context: You are sitting with John and there is one cup of coffee on the table. John says:}\)

\[
\text{áts’x-en lhkan} \quad i \quad \text{án’was-a} \quad \text{zew’áksten}
\]

see-DIR-1SG.SUBJ DET.PL two-EXIS cup

“I see two cups.”

\(\text{Later, you tell me:}\)

\#

\[
\text{qyax} \quad \text{ku7} \quad k \quad \text{John}
\]

drunk REPORT DET John

“[reportedly] John is/was drunk.”

A direct evidential (such as the Quechua ‘best possible grounds’ evidential, is claimed to be able to raise the quality threshold. We return to this issue in section 4.8.

In Korean, the spatio-temporal element co-occurs with true evidentials; see Chung (2005, 2007) for details.

The framework of C. Davis, Potts and Speas (2007) seems to also predict that the speaker can know that the embedded proposition is false: they argue that the use of an indirect evidential implies that the embedded proposition is below the quality threshold.

Faller (2002:227) advances the negation test as support for her illocutionary analysis of the Quechua evidentials, none of which scope under negation. Appropriately, however, she does not argue that the negation facts mitigate against a modal analysis. In fact, all the negation data provided by Faller are equally well accounted for under an Izvorski-style analysis. In de Haan’s (1999) discussion of interactions with negation, he argues that evidentials differ from epistemic modals in taking obligatory wide scope. However, he fails to distinguish between the restriction on the source of the information (which is predicted to take wide scope by both the modal and the non-modal analysis) and the asserted content.

The translations given for (41-43) are not natural ones. We have attempted to disambiguate the readings, while avoiding interference from restrictions on scopal interactions between modals and negation in English. See also below in the text, where we point out that the St’át’imcets modals do not even necessarily have the interpretation of a universal quantifier.

The Bulgarian perfect of evidentiality also involves variable quantificational strength, in spite of the translations in (39) above; see Izvorski (1997:226) for discussion.

This test was called ‘challengeability’ by Faller (2002); it is called ‘assent/dissent’ by Papafragou (2006) and Faller (to appear).

Papafragou (2006) also argues that dissenting with an epistemic modal involves claiming either that the specification of the modal base is incorrect, or that there has been a logical mistake such that the modal assertion does not follow from the available evidence. See also Garrett (2001:29-31). In our formal analysis to be given below, challenges to the modal base can be viewed in the same light as challenges to (premises which help set) the value of other free variables in discourse, such as pronouns, tenses, or quantifier domain restrictors.
Note that von Fintel and Gillies do not actually commit themselves to this analysis of the data; see their paper for details.

Mastermind is a game in which one player places coloured pegs behind a screen and the other must work out the colours and the order of the pegs after eliciting some clues.

The consultant’s initial response to (52a) was “You know, so you can’t really say k’a.” Once the context was more fully explained, she commented “It’s okay, if you don’t want to let him know.”

One consultant freely accepted (53a). A second consultant’s initial response to (53a) was “You wouldn’t say wá7asan’ because then you would be guessing.” When asked whether it would be okay if the responder is trying not to let the son know the facts, but merely wants to say “You’re right, there might be,” the consultant accepted the sentence. This second consultant also displayed the same initial reluctance to accept (53c).

It may seem as if the response in (54) denies the embedded proposition “Buffy St. Marie is coming to Mt. Currie”, rather than the modal claim. However, the continuation of the response indicates that what is being denied is the premise that Bill is reliable. The responder thus challenges the first speaker’s assumption that the set of worlds in which Bill reported that Buffy is coming contains some/only worlds in which the report is true. (See discussion in Faller 2002:102ff on how the reliability of the source affects the modal base with a reportative modal evidential.) Similar issues arise with an example provided by Faller (2002:113); see her discussion in fn 18. Faller observes that if the challenger does not know for sure whether the embedded proposition is true (as in (55)), challenges as in (55) can be reasonably assumed to involve denial of the modal claim.

Faller does apply the assent/dissent test in the way we suggest here to one of the Quechua evidentials, the conjectural -chá (Faller 2002:181). This evidential passes the assent/dissent test, which is consistent with Faller’s analysis of it as containing a modal component.

-\textit{sì} also cannot appear in the antecedent of a conditional; see Faller (2002:221; to appear: 8).

A reviewer asks whether the St’át’imcets evidentials scope over or under quantified subjects. Preliminary results suggests that both scope relations may be possible, but there are many interfering factors to control for and we have to leave discussion of this issue for future research.

There is another issue with respect to conditionals, namely whether the presupposition restricting the evidence source projects. As is well-known, presuppositions are blocked if the trigger appears in the consequent of a conditional whose antecedent asserts the presupposition. For example, (ia) presupposes (ib), but (ic) does not presuppose (ib).

(i) a. John will stop smoking when he reads this.
    b. John currently smokes.
    c. If John smokes, he will stop smoking when he reads this. (Faller 2002:118)

Given this, Faller (2002) argues that an element whose evidential meaning is a presupposition should lose its evidential meaning in cases parallel to (ic). Faller then offers (ii) as evidence that this prediction is not born out for the Quechua reportative. She observes (2002:118) that ‘[i]n as much as the statement in [ii] makes any sense at all, it is clear that the evidential meaning of -\textit{sì} in the consequent is not cancelled by expressing it explicitly in the antecedent.’ In other words, the requirement that the speaker of (ii) has reported evidence that Juan will come is not canceled by the fact that this information is contained within the antecedent.
Corresponding data have been difficult to elicit in St’át’imcets, since the sentences sound bizarre to consultants. However, we argue that even if the evidential meaning is preserved in the consequent of examples such as (ii), this does not necessarily constitute evidence against the presuppositional analysis of the evidential requirement. Notice that other grammatical elements which are frequently analyzed as inducing presuppositions also retain their presuppositions in parallel contexts. This is illustrated in (iii) for the gender features of pronouns. The pronoun in the second clause is still interpreted with its usual gender restrictions.

(ii)  *sichus ni-wa-rqa-n Juan hamu-na-n-ta chay-qa, Juan-qa hamu-nqa-s*

if  *say-1O-PST1-3 Juan come-NMLZ-3-ACC this-TOP, Juan- TOP come-3FUT-si*

$p = \text{"If I was told that John will come, then John will come."}$

$EV = \text{speaker was told that Juan will come.}^\text{'}$ (Faller 2002:118)

(iii) If the teacher is female, then she can coach the girls’ basketball team.

31 Garrett (2001) argues that evidentials in Tibetan interrogatives allow *only* the reading whereby the hearer is expected to use a certain type of evidence in their reply.

32 There is further work to be done on evidentials in St’át’imcets questions. Consistent judgments are difficult to obtain, and evidentials in questions often appear to be simply treated as vacuous, a fact for which we have no explanation at this time.

33 C. Davis, Potts and Speas (2007) admit this point as well; thus, they do not present the strengthening evidentials as evidence against a modal analysis.
Interestingly, von Fintel and Gillies argue that the apparent weakness of epistemic necessity modals in many contexts arises because epistemic modals incorporate evidential meaning. That is, they “signal the presence of an indirect inference or deduction rather than of a direct observation” (von Fintel and Gillies to appear: 8).

We can actually go further and say that there is no direct evidential in the language, neither overt nor null; see Matthewson and Davis (in prep.) for argumentation. Of course, there could be a language which possessed evidentials exactly like the St’át’imcets k’a, -an’ and ku7, and also possessed a direct evidential. There is no reason why all evidentials in a single language should be of the same type. See Blain and Déchaine (2007) for arguments that there are several different types of evidentials in Cree, for example.

Moeten also allows a deontic modal interpretation, which is not relevant here.

However, in section 7 we will agree with de Haan that elements choose either to encode information source, or to encode speaker certainty. We can thus (like de Haan) account for the data in (74) by means of an ambiguity analysis. We differ from de Haan in not assuming that moeten on its information source-reading is non-modal.

Recall that the existence of the report is presupposed, not asserted. Thus, the truth conditions of reportative sentences depend not on whether there was a report, but on whether the report was true. The speaker asserts that it is at least possible that the report was true.

The parallel between the evidentials and other modals in the language also further reinforces the conclusion of section 3.3 that the evidentials should not be analyzed as spatio-temporal operators.

The material in this section draws heavily on parts of Rullmann, Matthewson and Davis (to appear), where we adopt the same general analysis for a number of different St’át’imcets modals,
including deontics and futures. See also Davis, Matthewson and Rullmann (to appear), where we apply the same basic idea to circumstantial modals in St’át’imcets.

41 We are simplifying things slightly here. According to Kratzer, the modal base maps the evaluation world onto a set of propositions; it is therefore a function of type $<s,<st,t>>$.

42 In Rullmann, Matthewson and Davis (to appear), we argue that the choice function variable can be existentially bound as well, but we abstract away from that here as it is not relevant to the main point.

43 A similar suggestion is made by von Fintel and Heim (2005:76, fn. 3) in order to distinguish English likely from must: perhaps both involve universal quantification over worlds, but the domain of quantification is smaller for likely than for must, giving rise to a weaker interpretation for the former.

44 Thanks to a reviewer for asking us to include these data.

45 Incidentally, Aikhenvald also asserts that modal analyses of evidentials reflect a euro-centric bias:

   Scholars tends to assume that evidentials are modals largely because of their absence in most major European languages, thus trying to explain an unusual category in terms of some other, more conventional, notion. There is simply no other place in Standard Average European grammar where they could be assigned (Aikhenvald 2003:7).

We trust that section 4 of the present paper provides enough empirical evidence to exempt us from membership in the putative set of euro-centric researchers.

46 Note that we do not claim that elements which distinguish force can never narrow down the modal base in any respect; the German modals darf and wird discussed by Kratzer (1991) would be counter-examples to that claim (see section 6 above).